

1 **IN THE UNITED STATES DISTRICT COURT**
2 **FOR THE SOUTHERN DISTRICT OF TEXAS**
 HOUSTON DIVISION

3 UNITED STATES OF AMERICA)
)
4)
VS.)
5)
)
6 ROBERT T. BROCKMAN)
)

NO. 4:21-CR-09

Houston, Texas
1:27 p.m. to 5:40 p.m.

NOVEMBER 15, 2021

7
8 *****

9 **COMPETENCY HEARING**

10 **AFTERNOON SESSION**

11 **BEFORE THE HONORABLE GEORGE C. HANKS, JR.**

12 **UNITED STATES DISTRICT JUDGE**

13 **VOLUME 1**

14
15 *****

16 APPEARANCES:

17 FOR THE GOVERNMENT:

18 Mr. Corey J. Smith
19 Mr. Lee F. Langston
 Mr. Boris Bourget
 Mr. Christopher Magnani
20 U.S. Department of Justice
 Tax Division
21 150 M Street NE
 Room 2208
22 Washington, DC 20002
 Tel: 202-514-9623
23 Email: Corey.smith@usdoj.gov
 Email: Lee.f.langston@usdoj.gov
24 Boris.bourget@usdoj.gov
 Christopher.magnani@usdoj.gov
25

1 FOR THE DEFENDANT:

2 Mr. Jason Scott Varnado
3 Jones Day
4 717 Texas
5 Suite 3300
6 Houston, TX 77002
7 Tel: 832-239-3694
8 Email: Jvarnado@jonesday.com

6 Mr. James P. Loonam
7 Ms. Kathryn Keneally
8 Jones Day
9 250 Vesey Street
10 New York, NY 10281
11 Tel: 212-326-3939
12 Email: Jloonam@jonesday.com
13 Kkeneally@jonesday.com

11 COURT REPORTER:

12 Ms. Kathleen K. Miller, CSR, RMR, CRR
13 515 Rusk, Room 8004
14 Houston, Texas 77002
15 Tel: 713-250-5087

15 Proceedings recorded by mechanical stenography.

16 Transcript produced by computer-assisted transcription.

17

18

19

20

21

22

23

24

25

1 INDEX

2 RYAN DARBY, M.D.

3	Direct by Mr. Magnani	4
	Cross by Mr. Loonam	33
4	ReDirect by Mr. Magnani	133
	ReCross by Mr. Loonam	142
5	ReDirect by Mr. Magnani	143

6 ROBERT DENNEY, Ph.D.

7	Direct by Mr. Smith	145
---	---------------------	-----

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

RYAN DARBY, M.D. - DIRECT BY MR. MAGNANI

P R O C E E D I N G S

NOVEMBER 15, 2021

(1:27 p.m. to 5:40 p.m.)

(Defendant present.)

THE CASE MANAGER: All rise.

THE COURT: Please be seated, everyone. Okay.

Counsel, you may proceed when ready.

MR. MAGNANI: Thank you, Your Honor. And, actually, maybe before -- I just want to -- We came to an agreement with the defense that the clips of video would be most easily identified if we give them sort of sub-numbers.

THE COURT: Okay.

MR. MAGNANI: So, what we just watched was a clip from Exhibit 40, and I am now identifying it as Exhibit 40-A.

THE COURT: Okay.

DIRECT EXAMINATION (Continued)

BY MR. MAGNANI:

Q. Dr. Darby, do you remember the exhibit clip that we watched before the lunch break?

A. Yes, I do.

Q. So, first of all, can you just give the context? What was going on in that exhibit clip? Well -- sorry --

I'll ask a different question.

RYAN DARBY, M.D. - DIRECT BY MR. MAGNANI

1 Where were you in that video?

01:28:09

2 **A.** So, this was a clip from my interview and examination
3 with Mr. Brockman that occurred in May of 2021. So I was
4 in a conference room, at Jones Day, where I met with
5 Mr. Brockman, with the videographer, and was asking him
6 about his symptoms related to his cognitive and memory
7 problems.

01:28:22

8 **Q.** So, besides the fact that you were in a conference
9 room in a law firm and in front of cameras, how does this
10 compare to the type of clinical evaluation you do in your
11 work at Vanderbilt?

01:28:34

12 **A.** Well, this would be very similar to a clinical
13 evaluation. So, I was asking him the same types of
14 questions about his cognitive symptoms and trying to get a
15 sense of his other medical issues and the history that he
16 had had coming in.

01:28:50

17 **Q.** So, in the clip that we saw, you had asked him to
18 describe his cognitive problems? Is that -- is that
19 right?

20 **A.** I was asking -- Yes. I was asking him about his
21 memory concerns.

22 **Q.** Okay. And how did he respond?

01:29:01

23 **A.** And, so, Mr. Brockman told me about his memory
24 concerns and directed me towards evidence from his primary
25 care doctor that he had followed for some time, prior to

RYAN DARBY, M.D. - DIRECT BY MR. MAGNANI

1 to seeing -- so, Dr. Bill Obenour, who had been his
2 primary care doctor.

3 He was aware of the question I was asking
4 and the purpose of it, which was to evaluate his memory,
01:29:15 5 and he was able to recall that he had a box of these
6 records where at some point in the past he had mentioned
7 memory concerns to Dr. Obenour and directed me towards
8 them because he thought they may be useful in our
9 evaluation and was able to link it back to the question of
01:29:31 10 memory.

11 **Q.** So, responding that way to your question about when
12 cognitive problems begin, what does that demonstrate?

13 **A.** Again, it demonstrates an awareness of the purpose of
14 our evaluation, which is to demonstrate his memory and
01:29:48 15 cognitive abilities. It demonstrates an awareness of some
16 of the things that might be useful in our evaluation; so,
17 having other medical records that have -- at the time I
18 wasn't aware of that mentioned memory concerns at an
19 earlier time and that that might be beneficial to me, as I
01:30:04 20 was trying to come to an evaluation regarding his memory.

21 **Q.** And, so, how does that ultimately inform your opinion
22 about his cognitive function in May?

23 **A.** So, these are the types of examples of cognitive
24 abilities that were lacking in some of the cognitive
01:30:22 25 testing. So, these were examples that I would expect from

RYAN DARBY, M.D. - DIRECT BY MR. MAGNANI

1 someone who would mostly be having mild cognitive
2 difficulties but not having cognitive problems that would
3 progress to a more advanced stage.

01:30:39

4 **Q.** So, what does this inform about -- does this tell
5 us whether -- what does this tell us about dementia?

6 **A.** Well, it's consistent with the ultimate diagnosis
7 that he was at the stage of mild cognitive impairment at
8 that time.

01:30:51

9 **Q.** Now, you mentioned that he pointed you to records
10 that you hadn't seen before?

11 **A.** Right.

12 **Q.** Is that what you said?

13 **A.** Yes.

14 **Q.** Why hadn't you seen those records before?

01:30:59

15 **A.** They hadn't been given to me at that time.

16 **Q.** Okay. And are those records that are within the
17 ambit of your review in this case?

01:31:15

18 **A.** Yes. So, I eventually -- we requested those records
19 after learning about this, and I did obtain them several
20 weeks later and reviewed them.

21 **Q.** And who was the first person who told you about the
22 existence of these records?

01:31:24

23 **A.** Mr. Brockman was the one that told us during this
24 interview, so that was the first time I had known about
25 those records.

KATHY MILLER, RMR, CRR - kathy@miller-reporting.com

RYAN DARBY, M.D. - DIRECT BY MR. MAGNANI

1 Q. We showed a short clip of video, but can you
2 approximate about how long your whole exam was?

3 A. So, I believe I was there for three hours in total.
4 I think there was about an hour-and-a-half to two hours of
01:31:39 5 interview. There is the examination, and then I also
6 spent time talking with Mrs. Brockman as well.

7 Q. So, without watching the whole video, can you just
8 describe Mr. Brockman's performance over the course of
9 your in-person examination?

01:31:55 10 A. So, that was one of the examples of where
11 Mr. Brockman did better in the interview, so where he
12 seemed to have an awareness of what was going on and was
13 able to answer my questions.

14 During the cognitive testing the rate at
01:32:07 15 which he was responding to the questions was slower, and
16 he struggled with much more of the testing results in
17 responding to my questions during the inter -- during the
18 examination than he did during the interview.

19 Q. But throughout the interview portion were there other
01:32:22 20 examples of him demonstrating a higher level of cognitive
21 function?

22 A. There were. So, he was able to give me some specific
23 examples and a general overview of his medical history
24 that was largely reflected in the medical records I
01:32:38 25 reviewed. He was able to give me a few examples of things

KATHY MILLER, RMR, CRR - kathy@millers-reporting.com

RYAN DARBY, M.D. - DIRECT BY MR. MAGNANI

1 that had happened that, when I talked with his wife, were
2 accurate.

01:32:52

3 So, he told me, for instance, that he took
4 expired antibiotics before his last hospitalization for an
5 infection and delirium, which his wife also stated.

6 He told me about the example where he was
7 having a hallucination during his neuropsychological test.

01:33:08

8 So, I couldn't check everything that he
9 told me, but, at least, the examples that I mentioned are
10 places where he seemed to be accurate in terms of his
11 recollection.

01:33:23

12 **Q.** And you have been describing this exam in the context
13 of your first expert opinion, your diagnosis of MCI in
14 May. And you said that in the normal course you wouldn't
15 expect much change, but what happened in this particular
16 case?

01:33:38

17 **A.** Well, in this case, Mr. Brockman had a very serious
18 hospitalization for an infection. So, he had sepsis, or
19 an infection in his blood, and delirium, which is an acute
20 transient confusional state that goes along with that.
21 And he was in the hospital for about 12 days at the
22 beginning of June.

23 **Q.** Was that the first time he had sepsis?

01:33:51

24 **A.** No, it wasn't. So, he had been hospitalized with
25 sepsis in March of 2021 as well.

KATHY MILLER, RMR, CRR - kathy@miller-reporting.com

RYAN DARBY, M.D. - DIRECT BY MR. MAGNANI

01:34:09

1 Q. Besides the incidence of sepsis before your
2 evaluation and the other one after it, were there any
3 other -- Well, let me ask this question: What else
4 happened in June besides the hospitalization for sepsis
5 that could come to bear on Mr. Brockman's cognitive
6 health?

01:34:23

7 A. So, he also had a surgical procedure. So, he
8 underwent a urological procedure where he had general
9 anesthesia, which can be another risk factor for
10 developing delirium.

01:34:39

11 Q. So, you have got the surgical procedure. You have
12 got the sepsis hospitalization. How do these things
13 potentially contribute to neurocognitive dysfunction?

14 A. So, anytime there has been an episode of delirium,
15 that can increase the rate of progression of dementia.
16 And, so, in patients with these disorders, like
17 Alzheimer's or Parkinson's, having an episode of delirium
18 can accelerate that progression that you might see.

01:34:55

19 Q. Were you concerned that either of these June medical
20 events could have created such an acceleration of
21 neurodegeneration in this case?

22 A. Yes, particularly at his early hospitalization in
23 June, where he was in the hospital for 12 days and was
24 described as being delirious during that time.

01:35:10

25 Q. Have you had the opportunity to review video footage

RYAN DARBY, M.D. - DIRECT BY MR. MAGNANI

1 of Mr. Brockman being examined in July after these two
2 events?

3 **A.** Yes. So, he had examinations by the defense expert
4 witnesses in July, which I had access to and reviewed.

01:35:25 5 **Q.** And just -- I mean, how did he appear in July?

6 **A.** He appeared markedly different. So, he appeared
7 confused. He appeared to respond to certain questions
8 with answers that didn't make sense, and seemed very
9 different than the time when I saw him in May.

01:35:42 10 MR. MAGNANI: Your Honor, at this point I would
11 like to play another clip from that longer video. This one
12 is going to be Exhibit 91, and I am now just marking it as
13 sub-A for the clip, but the time stamp on the original
14 exhibit is 30 minutes and 25 seconds to 34 minutes and five
01:35:57 15 seconds. So, it's about a three-and-a-half minute clip,
16 Your Honor.

17 THE COURT: Okay. You may proceed.
18 (Video played as follows.)

19 *****

01:36:05 20 **Q.** ...issues that you have had?

21 **A.** Well, it actually began sometime in July. And they
22 end up putting me in Methodist and telling me that I was
23 -- what's the term for a bug that kind of invests itself
24 inside of me physically? And it's one of those ones that,
01:36:40 25 if you don't handle it properly and quickly, it will kill

RYAN DARBY, M.D. - DIRECT BY MR. MAGNANI

1 you.

2 Q. Okay.

3 A. And -- at any rate, that -- that's what happened to
4 me.

01:36:52 5 Q. Do you know how that happened or why that happened?

6 A. No.

7 Q. Where was the bug in you? Where was it located?

8 A. Basically, in the bladder.

9 Q. Okay. And how did they treat it?

01:37:04 10 A. They treated it with -- one of the ingredients is --
11 basically, I will say a list of characteristics to make a
12 car not work right.

13 Q. Okay.

14 A. And, so, it makes it to the service adviser. He's
01:37:51 15 the one that's pretty skilled.

16 Q. Yeah.

17 A. They can use that list, I guess, their list of what
18 they think is going on, going on on the inside.

19 Q. Do you have other medical issues or medical
01:38:06 20 conditions besides the one you just mentioned?

21 A. Yeah.

22 Q. Can you tell me about -- what ones do you know about?

23 A. Well, there's a -- I have had prostate infections
24 before.

01:38:22 25 Q. Okay.

KATHY MILLER, RMR, CRR - kathy@millers-reporting.com

RYAN DARBY, M.D. - DIRECT BY MR. MAGNANI

01:38:45

1 **A.** Not often, but I have had my share where I kind of
2 know what's going on. And they wanted authorization, you
3 know, to do -- you know, what I was asking. And so we
4 prepared a letter for them to go get -- They were actually
5 on CDK. They were not on our software. But their --
6 their moan and gripe -- I have to warn you. I am -- can't
7 hardly explain this. I am going to have to get out and
8 wander around.

01:39:08

9 **Q.** Well, let's do this. How about -- I am going to ask
10 a different question.

11 **A.** Okay.

12 **Q.** Okay. Can you tell me, where are we right now?

13 **A.** We are on the northern side of Houston by one of the
14 main traffic arteries.

01:39:27

15 **Q.** How about this place right here? Where are we right
16 now?

17 **A.** It's a hotel that my attorneys have engaged for the
18 purpose of holding this meeting.

19 **Q.** This is a hotel that we are in now? Do you know --

01:39:43

20 **A.** Well --

21 (Video concluded.)

22 *****

23 BY MR. MAGNANI:

01:39:50

24 **Q.** Dr. Darby, you were not present for that evaluation,
25 right?

KATHY MILLER, RMR, CRR - kathy@miller-reporting.com

RYAN DARBY, M.D. - DIRECT BY MR. MAGNANI

1 **A.** No, I was not.

2 **Q.** But do you know -- was Mr. Brockman at a hotel?

3 **A.** No. My understanding was that he was at Jones Day in
4 a conference room.

01:39:58

5 **Q.** And, so, in that clip, he talked about bladder
6 infections, cars not working, something about a skilled
7 service provider, went on about prostate, and then CDK
8 software. Is that -- did you -- are those things that he
9 brought up?

01:40:15

10 **A.** Yes, those are the things he was saying. So, it
11 appeared as if he was confused. He was being asked about
12 medical issues, and he would respond at times to that, but
13 then would begin speaking about things that didn't make
14 sense or they didn't follow from the question, why he had
15 switched to talking about that topic.

01:40:31

16 **Q.** So -- and -- well, I mean, how does that compare to
17 the Mr. Brockman that you met with in person in May?

18 **A.** So, it appears markedly different. So, you know, in
19 May during our evaluation he always had an understanding
20 of my questions. You know, there are times where he could
21 remember details, but he never became nonsensical or was
22 talking about things that weren't related to what was
23 going on.

01:40:48

24 **Q.** Have you considered what could account for this
25 pretty dramatic change in presentation?

01:41:04

KATHY MILLER, RMR, CRR - kathy@millers-reporting.com

RYAN DARBY, M.D. - DIRECT BY MR. MAGNANI

1 **A.** Yes. So, I think there are three main things that
2 could be considered in this.

01:41:20

3 And, so, one is that he's had rapid
4 progression of dementia, that his neurodegenerative
5 disorder progressed rapidly and that that explains why
6 he's presenting so much worse in July than he was when I
7 saw him in May.

01:41:33

8 The second possibility is that he was
9 still actually delirious during July during those
10 evaluations. And, so, you know, after a delirium, which
11 is, again, a transient episode, there can be some
12 continued subtle symptoms that may persist. And, so,
13 while the time course from his hospitalization to July
14 would be atypical to have that degree, it's still
15 possible.

01:41:50

16 And the third possibility is that he was
17 exaggerating his symptoms more than he had been
18 previously.

01:42:00

19 **Q.** And, so, just -- I want to walk through how you
20 explored these potential possibilities starting with the
21 first.

22 So, what did you do to investigate whether
23 or not the change in presentation was due to a genuine
24 neurological decline?

01:42:15

25 **A.** So, to investigate that, we ordered another FDG PET

RYAN DARBY, M.D. - DIRECT BY MR. MAGNANI

01:42:30

1 scan of the brain. So, again, that's the PET scan that
2 looks at brain metabolism, that would look at brain
3 activity, and could be a source of trying to see if there
4 is brain damage. So, by comparing it to the March scan,
5 we could see had there been a significant change in that
6 brain PET scan that would go along with an advancement of
7 his dementia progression.

01:42:44

8 **Q.** And, Dr. Darby, I want to pull up -- So, do you
9 remember when you ordered this scan?

10 **A.** So, this scan was recommended. I don't believe I
11 ordered it, but it was performed in August of 2021.

12 **Q.** Okay. And this is the slide we were looking at
13 before, right?

14 **A.** Correct. Yes.

01:42:56

15 **Q.** Okay. Can you describe in words what -- what does
16 this show? What is the blue indications on these six
17 angles of brain?

01:43:17

18 **A.** And, so, these are six different views of
19 Mr. Brockman's brain, so from different angles. And the
20 blue -- so, the colors correspond to areas of brain damage
21 on the PET scan. So, these are areas where there is
22 reduced brain activity in Mr. Brockman's case.

01:43:31

23 And, so, you can see that there is
24 reduction in a number of areas, although this is less than
25 my mental image of what a typical dementia patient would

RYAN DARBY, M.D. - DIRECT BY MR. MAGNANI

1 look like.

2 Q. And, so, just -- I want to get a little bit deeper
3 here.

4 So, what is a radio tracer?

01:43:43

5 A. So, a radio tracer -- these are all scans where there
6 is an injection of a radioactive material that binds to a
7 specific thing in the body. And, so, in this case, it
8 binds to your glucose, which is the energy source.

01:44:00

9 Q. And when you say in this case "it," do you mean that
10 FDG is a radio tracer that binds the glucose?

11 A. Yes. So, there are different types of PET scans, and
12 it depends on what that radio tracer binds to.

13 Q. And why do we want to see how much radio tracer binds
14 to the glucose?

01:44:14

15 A. So, this is a measure of brain function. So, it
16 tells you how active -- or metabolically active those
17 brain areas are. And it's a marker of brain damage. And,
18 so, if there is less of the tracer going to a specific
19 area of the brain, that indicates there has been brain
20 damage to that region and suggests that there could be
21 neurodegeneration there.

01:44:28

22 Q. So, the areas that are lit up, that's -- is that the
23 good parts or the bad parts?

24 A. Those are the bad parts.

01:44:41

25 Q. Okay.

RYAN DARBY, M.D. - DIRECT BY MR. MAGNANI

1 **A.** So, the areas showing colors are the areas where he
2 has less tracer going to that brain region.

3 The gray areas are normal. So, those are
4 the areas that are normal in the brain.

01:44:52

5 **Q.** And, so, is this a -- is this a picture or is this a
6 graphical representation of something else?

7 **A.** Well, it's a graphical representation of those
8 numbers. So, each, kind of, point on that picture
9 corresponds to the amount of blood sugar going to that

01:45:07

10 brain area. And then the colors correspond to how
11 significant that is; so, how off or abnormal that is.

12 **Q.** And, so, specifically, the measure of metabolic
13 uptake, what is that being compared to in order to
14 generate these different colors?

01:45:25

15 **A.** So, it's being compared to subjects who do not have
16 any neurological or cognitive disorders. So, this is in
17 comparison to groups of subjects that don't have any
18 neurological or cognitive diseases.

01:45:45

19 **Q.** And you said earlier about how this is not consistent
20 with what you see in your clinical practice of dementia
21 patients. Right?

22 **A.** Correct.

23 **Q.** Okay. And, so, can you just -- again, just describe,
24 as best as you can, what would this -- what would have to

01:45:58

25 happen to these images for it to be consistent with what

RYAN DARBY, M.D. - DIRECT BY MR. MAGNANI

1 you see in your clinical practice?

2 **A.** So, the areas of the color -- so, the blue colors --
3 would be wider and they would be more extensive; so, they
4 would involve much more of the brain than what we are
5 seeing here.

01:46:13

6 **Q.** And I just also -- just to -- sorry to sort of bring
7 it back -- but what is the -- what is the interplay
8 between what an FDG PET measures and what a volumetric MRI
9 measures?

01:46:30

10 **A.** So, they're both different ways of trying to measure
11 for brain damage.

12 So, the FDG PET scan looks at that brain
13 activity or brain function, and that is a more sensitive
14 marker for underlying damage.

01:46:44

15 The brain MRI looks at the brain volume --
16 so, how large is the area -- and that can be a later
17 marker of patients with neurodegenerative disorders.

18 **Q.** And when you say "a later marker," not to be too
19 obvious about it, but what happens first? The changes in
20 metabolic uptake or the changes to brain volume?

01:47:01

21 **A.** The changes in metabolic uptake typically happen
22 first. So, it's more sensitive of detecting these
23 problems at an earlier stage.

24 **Q.** Okay. Now, you started talking about a comparison.

01:47:15

25 Can you actually advance to the next

RYAN DARBY, M.D. - DIRECT BY MR. MAGNANI

1 slide, please?

2 **A.** Yes.

3 **Q.** What is this slide depicting?

4 **A.** So, this is Mr. Brockman's original FDG PET scan that
5 was obtained in March of 2020.

6 **Q.** And the same question as before about the August one.
7 How does this correspond to what you see in your clinic of
8 dementia patients?

9 **A.** Again, this would be something that would correspond
10 to an early patient in that disease course; so, typically,
11 at the range of a mild cognitive impairment.

12 **Q.** And did you get -- did you compare the -- Excuse me.
13 Did you compare the March and August FDG PET scans?

14 **A.** I did, yes. And, so, here we can see the two scans.
15 And, so, on the top is Mr. Brockman's scan from March of
16 2021. On the bottom is his scan from August of 2021. And
17 the different views or slices are corresponding to each
18 other.

19 And what you see is that there is a very
20 similar pattern in the areas that are involved, that there
21 has probably been a mild amount of progression but largely
22 looks the same as it did in March.

23 **Q.** You talked about what you would expect to see in the
24 normal course. How do the changes in these two PETs
25 compare to the changes you would see in the normal course

RYAN DARBY, M.D. - DIRECT BY MR. MAGNANI

1 within five months?

2 **A.** This is about the changes that I would expect, that
3 there has been a mild progression in the areas that are
4 involved and the extent.

01:48:49

5 **Q.** So, did you -- did you read any other expert opinions
6 about this change?

7 **A.** Yes. So, I looked at the other opinions regarding
8 the two PET scans and compared them.

01:49:11

9 **Q.** And, so, what is this that you are now showing on the
10 screen, Dr. Darby?

11 **A.** So, this is a larger chart looking at the different
12 impressions from the different people that look at these
13 PET scans.

14 **Q.** Okay.

01:49:21

15 **A.** So, again, the clinical radiologist was the
16 radiologist at Houston Methodist who evaluated the PET
17 scans. Dr. Ponisio was the government expert, nuclear
18 radiologist. Dr. Whitlow is the defense expert
19 neuroradiologist. And then my own opinions.

01:49:38

20 And, again, for the disease itself, in
21 terms of the pattern, I think the opinions were fairly
22 consistent. In terms of the severity of that, they were
23 fairly consistent.

01:49:51

24 And then focusing on the change. And, so,
25 Dr. Ponisio felt that that represented mild progression.

RYAN DARBY, M.D. - DIRECT BY MR. MAGNANI

1 Dr. Whitlow commented that they were similar between the
2 two recent scans, though it may have progressed slightly.
3 And I also stated that I felt that there had been some
4 minimal progression between the two scans.

01:50:08

5 **Q.** So, if any, how much disagreement is there amongst
6 the experts of the change between the March and August FDG
7 PET scans?

01:50:21

8 **A.** In terms of the comments about the change, I don't
9 think there appears to be a large amount of difference
10 between the experts.

11 **Q.** As far as you can tell, is there any difference?

12 **A.** No. Not in reading this, no.

01:50:37

13 **Q.** So, your -- how does this inform your investigation
14 of the different things that could have lead to the change
15 in presentation of Mr. Brockman between May and July?

16 **A.** Yeah. So, this amount of change on the PET scan
17 would not explain the amount of change we saw in his
18 performance in the July interviews compared to May.

01:50:55

19 **Q.** So, does -- what does this tell us about whether the
20 sepsis that Mr. Brockman suffered from in June -- what
21 does this tell us about whether that sepsis contributed to
22 an accelerating case of neurodegeneration?

01:51:13

23 **A.** Well, it didn't contribute to an acceleration of what
24 I would expect in terms of his FDG PET changes and can't
25 fully explain the change that we see in his examination.

RYAN DARBY, M.D. - DIRECT BY MR. MAGNANI

1 Q. Okay. So, back to the -- what was the second
2 potential that you investigated to try to determine the
3 change in presentation of Mr. Brockman?

01:51:25

4 A. Yeah. So, the second consideration was that he could
5 still be delirious. And, so, delirium is a transient
6 acute confusional state. So, it occurs quickly and is
7 reversible and is related to the underlying medical issue
8 causing it.

01:51:43

9 And, so, after a hospitalization for
10 delirium, it would still be possible that he could have
11 some residual delirium after he left. And, so, that was
12 another consideration as to whether he was still delirious
13 at the time in July and whether that could explain the
14 differences that we are seeing.

01:51:59

15 Q. So, was there a way available to test if he was
16 delirious at the time of the July exams?

17 A. No. So, after the fact there is not a way to test,
18 after he's been seen, whether he was actually delirious at
19 that time.

01:52:13

20 But what we did recommend is getting a
21 test to see if he could still be delirious afterwards.
22 And, so, we recommended getting an EEG test of the brain.
23 And, so, that looks at the brain's state. So, what state
24 is that electrical brain in? And it can tell us if he's
25 in a brain state that would be consistent with delirium.

01:52:31

RYAN DARBY, M.D. - DIRECT BY MR. MAGNANI

1 Q. Do you recall approximately the date of the EEG in
2 this case?

3 A. The EEG happened in September of 2021.

01:52:47

4 Q. And you said it can't tell us whether he was
5 delirious in July, but -- so, what does it tell us?

6 A. Well, it tells us that he wasn't delirious at that
7 point. So, he didn't appear to be in a brain state that
8 would go along with delirium.

01:52:56

9 Q. And -- sorry -- just to clarify: When you say "at
10 that point," do you mean in September, Doctor?

11 A. In September, yes.

12 Q. So, it sounds like you're -- you can't be sure if he
13 was delirious in July; is that right?

01:53:07

14 A. Correct. I can't be sure that he was delirious or
15 not in July.

16 Q. If he was delirious in July, what would that mean?

01:53:23

17 A. Well, it would mean that the results of his
18 evaluation at that time aren't valid representations of
19 his actual cognitive abilities. So, if that was due to an
20 acute and transient state, then it wouldn't accurately
21 represent what his true cognitive abilities are.

22 Q. And that's because it's transient and it went away,
23 in this case, by September?

24 A. Correct.

01:53:35

25 Q. So, if he was not delirious in July, where does that

RYAN DARBY, M.D. - DIRECT BY MR. MAGNANI

1 leave us?

01:53:51

2 **A.** Well, if he wasn't delirious in July and the change
3 in his examination isn't related to a progression of his
4 dementia, without another explanation, I think the most
5 likely reason would be that he was exaggerating his
6 symptoms with me.

7 **Q.** Now, there were subsequent examinations, videotaped
8 examinations, in this case after July. Right?

01:54:05

9 **A.** Yes. Mr. Brockman was evaluated again in October by
10 both defense and prosecution experts.

11 **Q.** And, just overall, how would you describe the
12 difference in presentation of those two October
13 evaluations?

01:54:21

14 **A.** Yeah. So, I think that in October there are no
15 longer as many clear examples where he was confused to the
16 degree that he was in July. So, there were not as many of
17 those times where he appeared to be answering in
18 nonsensical ways, but he still presented with much more
19 significant cognitive problems than he did in May. So, he
20 was often not being able to give complete, thorough or
21 accurate answers.

01:54:40

22 MR. MAGNANI: And at this time, Your Honor, I
23 would like to show Exhibit 93. This is a clip from 31
24 minutes and 35 seconds to 34 minutes. So, it's about
25 two-and-a-half minutes, Your Honor. And I am marking this

01:54:53

RYAN DARBY, M.D. - DIRECT BY MR. MAGNANI

1 particular clip as 93-A.

2 THE COURT: Okay.

3 *****

4 (Video clip played as follows:)

01:55:02 5 Q. Okay. Hi, Mr. Brockman. Nice to see you again.

6 So, let me ask a question. I am going to
7 lower my mask a minute. Do you remember seeing me or
8 meeting with me before?

9 A. I remember your face.

01:55:16 10 Q. Okay. Do you remember who I am?

11 A. No.

12 Q. Do you remember anything about me?

13 A. Unfortunately, no.

14 Q. Okay. Do you know what I am here to do today?

01:55:29 15 A. Yeah. You're here to take my deposition.

16 Q. To take your deposition?

17 A. Uh-huh.

18 Q. What would I be taking your deposition for?

19 A. I don't know.

01:55:42 20 Q. Are you involved in a legal case right now?

21 (Video paused.)

22 *****

23 MR. MAGNANI: And I apologize, Your Honor. I'm

24 just going to interrupt the video here. It's actually not

01:55:50 25 the clip that we intended to show. Of course, we are happy

RYAN DARBY, M.D. - DIRECT BY MR. MAGNANI

1 to show it if the Court would like.

2 Tell me when you have the clip up.

3 *****

4 (Video played as follows:)

01:55:58 5 Q. Both of us are wearing masks. Can you tell me why we
6 both have masks on?

7 A. Well, that's a good question. I never have thought
8 about that. Other than the fact y'all like to do it --

9 Q. Well --

01:56:11 10 A. -- or you feel it is appropriate.

11 Q. Why do we have to wear a mask today?

12 A. I don't know.

13 Q. Do you wear masks at home?

14 A. No.

01:56:23 15 Q. Is there any reason why people are walking around
16 wearing masks currently?

17 A. Well, because there's various big and bad infections,
18 you know, and wearing a mask is one of the ways that you
19 reduce the likelihood that you are going to get something.

01:56:42 20 Q. Is there one particular infection that people are
21 concerned about?

22 A. It's all -- all related to the -- this -- I'm sorry,
23 I can't give you a decent description on that.

24 Q. It sounds like you were just about to describe some
01:57:13 25 sort of infection out there.

RYAN DARBY, M.D. - DIRECT BY MR. MAGNANI

1 A. Yeah. It's a virus.

2 Q. Yeah. How does it affect people?

3 A. Well, it depends on whether or not you have had
4 preventive medicine. If you have preventive medicine,
01:57:28 5 like you ought to, if you're less than ancient, then you
6 have got a pretty good chance of surviving it.

7 Q. Okay.

8 A. I am 80, and I got the two-dose version of the
9 vaccine put out by -- I think they're called Moderna.

01:57:53 10 Q. Yeah.

11 A. And it's kept my wife, my grandson, my son, my
12 daughter-in-law -- it's kept everybody safe so far.

13 Q. What's the vaccine for?

14 A. It's to prevent infection from the COVID virus.

01:58:20 15 Q. Okay. When --

16 (Video stopped.)

17 *****

18 BY MR. MAGNANI:

19 Q. Is -- how would you compare this October presentation
01:58:29 20 to the one we just watched from before in July?

21 A. Yeah. So, in this video example, he's stating things
22 that are appropriate to the question. So, he understands
23 the question. He is not going into tangential or
24 nonsensical responses that are related to something else.

01:58:47 25 But he continues to really struggle with under -- being

RYAN DARBY, M.D. - DIRECT BY MR. MAGNANI

1 able to answer it accurately.

2 So, this is something that, in May, he was
3 readily aware about COVID and the virus, the precautions,
4 the vaccine, and he struggled with that initially, where
01:59:00 5 he gave general comments about preventing infections but
6 struggled to get to the specifics.

7 **Q.** So, would you say the October presentation is not as
8 bad as July?

9 **A.** Correct. It's not as bad as July but clearly worse
01:59:14 10 than October.

11 **Q.** And, so, from when you first met this man until the
12 most -- you know, these October recorded interviews, what
13 accounts for that delta in presentation?

14 **A.** Well, again, you know, looking at that, what we
01:59:28 15 expect, based on the natural disease course and based on
16 the difference in his PET scans, is that there would be
17 some mild progression in his symptoms, but not to the
18 extent that we're seeing here and not to the extent that
19 his family is reporting in terms of his functional
01:59:43 20 impairments at home, where he is really dependent on most
21 things, from what we're hearing.

22 **Q.** And so -- and was he delirious in October?

23 **A.** No, he was not. So, he -- again, he didn't seem to
24 have those nonsensical responses. And the experts that
01:59:59 25 evaluated him, I don't think there were any that

RYAN DARBY, M.D. - DIRECT BY MR. MAGNANI

1 considered him to be delirious in October. So, I don't
2 think that's a likely explanation for what was going on at
3 that time.

02:00:09

4 **Q.** And, so, turning to the final opinion that you had, I
5 mean, why do you still say that he is exaggerating?

02:00:25

6 **A.** Well, I think this is another example where he's
7 exaggerating. And, so, you know, that's really based on
8 examples that we have from before as well. And, so, prior
9 to my May evaluation, there are really clear examples of
10 him being able to perform at a higher cognitive ability
11 than he was demonstrating in his clinical exams.

02:00:41

12 So, in 2019 we had examples of him giving
13 speeches in depositions where he was clearly operating at
14 a high level despite scoring in dementia range on his
15 evaluations.

02:00:58

16 In 2020 he continued to work at Reynolds
17 and Reynolds. And from the deposition testimony of Tommy
18 Barras, one of his close work associates, there weren't
19 any concerns that he had cognitive impairments to a degree
20 where it would interfere with that work.

02:01:10

21 In my May evaluation he was able to
22 demonstrate higher cognitive capacities than the dementia
23 ratings that he was getting on his evaluations. But after
24 May we don't have any of those examples. So, those videos
25 in July and October, they don't demonstrate cognitive

RYAN DARBY, M.D. - DIRECT BY MR. MAGNANI

1 abilities beyond his testing results, and we don't have
2 any of those real-world examples to go on.

02:01:26

3 So, really, the only things we have to go
4 on in terms of estimating, you know, what are his true
5 cognitive capabilities, one is the expected disease
6 progression, which, again, I would expect there to be mild
7 changes. And the other is the brain imaging changes,
8 which, again, were minimal or mild.

02:01:40

9 And, so, there's a clear gap between
10 those. So, there is a clear gap between where we expect
11 him to be based on that progression and based on the
12 imaging and based on his actual reports of his functional
13 impairments and his cognitive testing.

02:01:59

14 Q. And, so, you mentioned certain data streams drying
15 up. I mean, when is the last time you saw Mr. Brockman
16 performing outside of an exam room on videotape?

17 A. Performing outside of an exam room on videotape, I
18 think it would be the videos of him giving speeches.

19 Q. What year is that, Dr. Darby?

02:02:17

20 A. That would be 2019.

21 Q. And in terms of examples of his function as CEO of
22 his company, when is the last time you see examples,
23 outside of the examination room, of him doing that?

24 A. That was through November of 2020.

02:02:30

25 Q. And in terms of in recorded interviews, when is the

RYAN DARBY, M.D. - DIRECT BY MR. MAGNANI

1 last time you see video-recorded interviews of
2 Mr. Brockman demonstrating a higher level of cognitive
3 function than suggested by his testing?

4 **A.** That was in May of 2021.

02:02:46

5 **Q.** So, since May of '21, do you have any examples from
6 the outside world, from outside the exam room, that show
7 Mr. Brockman's cognitive function being higher than inside
8 the exam room?

02:03:00

9 **A.** No. So, before May I had those examples, and after
10 May I don't have any examples where I can clearly show
11 that he's performing at a higher cognitive ability.

12 **Q.** And, so, how do you -- without that information from
13 the outside, how can you come to an opinion that he is
14 still exaggerating today?

02:03:14

15 **A.** Well, I think it's related to the difference that we
16 are seeing in the expected disease course and the
17 difference in the neuroimaging. And, so, based on his
18 most recent neuroimaging, I would expect that at the mild
19 range of severity, so in the mild cognitive impairment
20 range. Based on the interval change between March and
21 August, which was minimal, I would not expect him to have
22 a significant amount of progression.

02:03:31

23 So, I have to base it entirely on those
24 objective neuroimaging measures and an understanding of
25 the disease course, both of which are imprecise. So, we

02:03:44

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 know that there can be some variability with those; and,
2 so, I can't give an accurate estimate as to what his true
3 cognitive abilities would be because I simply don't have
4 that information.

02:03:56

5 **Q.** So, you could give an accurate estimate in May but
6 not as much now?

7 **A.** Correct.

8 MR. MAGNANI: I have no further questions, Your
9 Honor.

02:04:05

10 THE COURT: Cross-examination?

11 MR. LOONAM: Yes, Your Honor. Just take a
12 moment. Court's indulgence.

13 THE COURT: Sure. Take your time.

14 **CROSS-EXAMINATION**

02:04:29

15 BY MR. LOONAM:

16 **Q.** Good afternoon, Dr. Darby.

17 **A.** Good afternoon.

18 **Q.** Okay. Doctor, you have -- you agree that
19 Mr. Brockman suffers from Parkinson's disease. Correct?

02:05:04

20 **A.** Yes.

21 **Q.** And Mr. Brockman was first diagnosed with Parkinson's
22 disease back in January 2019. Correct?

23 **A.** Yes. I believe so.

24 **Q.** And that was after the government alleges that --

02:05:23

25 well after the government alleges that Mr. Brockman became

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 aware of this case and investigation. Correct?

2 **A.** I believe so, yes.

3 **Q.** But, nevertheless, unfortunately, Mr. Brockman
4 suffers from Parkinson's disease. Correct?

02:05:41

5 **A.** Yes, he has Parkinson's disease.

6 **Q.** And Mr. Brockman's diagnosis was confirmed by a
7 DaTscan. Correct?

8 **A.** Yes, it was supported by the DaTscan.

02:06:05

9 **Q.** And the DaTscan showed severe loss, severe loss of
10 dopaminergic -- apologies for that -- dopaminergic
11 neuronal function in the bilateral dorsal striatum of his
12 brain. Correct?

13 **A.** Yes. It showed Dopamine loss in those areas.

02:06:20

14 **Q.** Yeah. So, what is the severe loss? What's the
15 severe loss? What is happening to Mr. Brockman's brain?

16 **A.** Well, the loss of Dopamine neurons. So, again, those
17 are the neurons that are involved in the motor symptoms;
18 so, they are in the deep areas of the brain. And those
19 are projecting to the basal ganglia, and that provides
20 evidence that there has been dopamine neuron loss that
21 goes along with those motor symptoms he has been having.

02:06:36

22 **Q.** And not only motor symptoms, right?

23 **A.** I'm sorry?

02:06:51

24 **Q.** Parkinson's disease consists of both motor symptoms
25 and non-motor symptoms; is that accurate?

KATHY MILLER, RMR, CRR - kathy@miller-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 **A.** Yes, it can.

2 **Q.** And the motor symptoms in Parkinson's disease include
3 bradykinesia, which is an impossible word to say, that
4 means "moving really slow." Right?

02:07:04

5 **A.** Slowness, right.

6 **Q.** Resting tremors?

7 **A.** Yes.

8 **Q.** Rigidity?

9 **A.** Yes. Those are the hallmark motor features of it.

02:07:16

10 **Q.** Postural instability?

11 **A.** Yes. That's one thing that can be seen with it.

12 **Q.** Yeah. And you tested that, didn't you, when you were
13 at Jones Day with Mr. Brockman?

14 **A.** I did, yes.

02:07:26

15 **Q.** You had him touch his nose, and at one point you had
16 him standing, and you -- you hit him on the shoulders to
17 see if he would fall back?

18 **A.** Yes. To check his postural stability, yes.

19 **Q.** And the non-motor symptoms of Parkinson's disease
20 include fatigue?

02:07:47

21 **A.** So, that's -- that's a pretty nonspecific symptom.
22 It can be involved in Parkinson's disease, yes.

23 **Q.** Olfactory deficits, problems smelling stuff?

24 **A.** Yes. That can be a change that happens in persons
25 many years before they develop Parkinson's disease.

02:08:02

KATHY MILLER, RMR, CRR - kathy@millers-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 Q. So, those changes could start -- can start early,
2 before Parkinson's disease is formally diagnosed?

3 A. The loss of smell has been one thing that has been
4 reported for that.

02:08:13

5 Q. Uh-huh. What about -- what about anxiety? Is that
6 associated with Parkinson's disease?

7 A. Well, anxiety can be associated with a number of
8 these different disorders. And, so, you know, just
9 anxiety in itself, it can occur. It wouldn't be the first
10 psychiatric symptom I would think of.

02:08:31

11 Q. Is it also associated with depression?

12 A. It can. So, some patients with Parkinson's disease
13 have depression.

14 Q. And I think you mentioned this on -- on your direct,
15 that Parkinson's -- the non-motor symptoms also include,
16 you know, learning and memory deficits. Is that accurate?

02:08:45

17 A. Well, so, patients with Parkinson's disease can
18 develop cognitive issues; and, so, sometimes that involves
19 learning and memory, but in other cases it involves other
20 aspects of their cognitive abilities.

02:09:03

21 Q. Such as?

22 A. Such as attention, working memory, decisionmaking and
23 executive functions.

24 Q. And that's -- so -- and is that -- and that's just a
25 non-motor symptom of the Parkinson's disease, not -- not

02:09:18

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 Alzheimer's dementia, not Lewy body dementia. Those are
2 non-motor symptoms of the Parkinson's. Correct?

3 **A.** Well, there are a number of reasons why cognitive
4 symptoms can happen in a patient with Parkinson's disease.

02:09:36

5 One of them is related to the deeper
6 structures of the brain, so the same areas that are
7 affecting those motor circuits going from the basal
8 ganglia to other areas. That can result in similar
9 symptoms to the motor symptoms. So, there may be a
10 slowness in terms of thoughts. We call it "bradyphrenia."
11 So that slowness in thinking, that slowness in
12 decisionmaking, a slowness in speech, and that can lead to
13 making things harder to get done, having difficulty with
14 multi-tasking. So, some of those symptoms can be related
15 to damage in those areas.

02:10:06

16 Other symptoms of other cognitive in
17 patients with Parkinson's disease are likely because the
18 disease is spreading into other areas of the brain, into
19 the cortex, where it may overlap and cause other types of
20 symptoms.

02:10:20

21 **Q.** Yeah. And the brain is amazingly complicated, as I
22 have learned during this process, and it's really --
23 really something, huh?

24 Is there a project right now to, like, map
25 every neuron that is, you know -- and see where it is

02:10:30

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 going in the brain?

2 **A.** There are a number of projects going on trying to
3 understand the brain.

02:10:40

4 **Q.** Yeah. And is it true that -- you know, because you
5 talked about, you know, damage in one area -- but is it
6 true that you could have damage in one area, but it winds
7 up affecting another area that it's connected to somewhere
8 else; and, so, where you're seeing the hypometabolism is
9 actually caused by damage in another area?

02:10:59

10 **A.** Well, yes and no. And, so, damage in one area can
11 affect areas of the brain that it's connected to. And,
12 so, that is something that we know, that damage to that
13 area affects the other parts of that circuit.

02:11:13

14 One of the ways it does that is by
15 reducing the brain activity in that area. So, there is
16 some uncertainty about whether things like fMRI or PET
17 scans -- you know, it reflects brain damage, but it may
18 also reflect damage from those connections.

19 **Q.** Yeah. And that's -- so, is that neuronal disruption?

02:11:30

20 **A.** It can be neuronal disruption or it can be disruption
21 of the communication between the areas in a way that's not
22 necessarily a neuronal dysfunction but an informational
23 process disruption.

02:11:49

24 **Q.** I see. And those different processes that you just
25 described, those -- those don't all lead to atrophy, do

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 they?

02:12:07

2 **A.** No. So, if there -- it can lead to atrophy. So, we
3 can see that damage in one area will actually cause a
4 connected area to become atrophied, but it doesn't always
5 do that. And we can also see that damage in one area can
6 reduce brain activity in a connected area. But, again, we
7 don't always see that.

8 **Q.** Yeah. It's complicated?

02:12:20

9 **A.** Yeah. For instance, in PET scans one of the things
10 you may look for, if there is disease in the frontal lobe,
11 is there a corresponding difference in the cerebellum
12 where there is a connection there.

13 **Q.** All right. Parkinson's disease often leads to
14 dementia. Correct?

02:12:34

15 **A.** Yes.

16 **Q.** In fact, dementia is a common and devastating symptom
17 of Parkinson's disease. Correct?

02:12:48

18 **A.** Dementia is a common symptom that happens in
19 Parkinson's disease, and I think we would all consider it
20 to be a very severe problem.

21 **Q.** So, you would agree it's a devastating symptom of --
22 of Parkinson's disease?

23 **A.** I think any time there is a disease resulting in
24 affecting cognition, that is devastating.

02:13:03

25 **Q.** And we all agree that Mr. Brockman has Parkinson's

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 disease.

2 Do you agree that memory problems are
3 frequently the first subjective cognitive complaint in
4 Parkinson's disease?

02:13:19

5 **A.** So, typically, we think of memory symptoms as being
6 the first symptom that we see in Alzheimer's disease.
7 They can present in Parkinson's patients with cognitive
8 impairment as well.

02:13:35

9 And sometimes patients will describe what
10 they are saying as memory problems but, in talking with
11 them, it's slowness. It's difficulty coming up with a
12 word. It may not be related to memory the way that we
13 think of it as clinicians and define memory in our
14 testing.

02:13:48

15 **Q.** I mean, there are all sorts, but you wouldn't agree
16 with the statement that memory problems are frequently the
17 first subjective cognitive complaint in Parkinson's
18 disease?

02:13:59

19 **A.** I think it's often one of the first complaints for
20 someone who is having cognitive problems.

21 **Q.** Okay. Now, there are -- you described dementia as a
22 catch-all, and Alzheimer's is another type of dementia.
23 Correct?

02:14:25

24 **A.** Yes. Alzheimer's is another disease that can lead to
25 dementia.

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 Q. So, Alzheimer's is another disease that could lead to
2 dementia. So, are you distinguishing between a biological
3 Alzheimer's versus clinical Alzheimer's?

02:14:40

4 A. Yes. So, the biological processes in Alzheimer's
5 begin, again, when people are cognitively normal, and they
6 progress from those biological changes. So, the amyloid,
7 the Tau changes, result in neurodegeneration, and that
8 corresponds to the symptoms which progress from the normal
9 stage, to the mild kind of impairment stage, to the

02:14:59

10 dementia stage.

11 Q. And, so, Alzheimer's dementia would be a clinical
12 diagnosis. Right?

13 A. So, Alzheimer's dementia would refer to a patient
14 with dementia that is thought to be due to Alzheimer's
15 disease.

02:15:14

16 Q. And that would be a clinical determination as opposed
17 to -- In other words, you can't just look at a scan and
18 say somebody has Alzheimer's dementia?

19 A. Right. So, you can't diagnose dementia based on the
20 scan alone, but our definition has changed where for many
21 of the definitions of Alzheimer's or other types of
22 dementias, there is an acknowledgement of looking at the
23 neuroimaging to determine if that is consistent with it.

02:15:30

24 So, in some of those it's the case that it
25 is possible, if it's just the clinical symptoms, but it

02:15:47

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 becomes probable with the imaging that would go along with
2 it.

3 Q. Yeah, it's almost -- at some point it's a
4 technicality, it seems. So, if the brain is riddled with
5 tangles and plaques and has hypometabolism and you just
6 look at the brain, you are looking at the scan, you would
7 completely expect it to be, you know, severe Alzheimer's
8 dementia or end-stage Alzheimer's dementia, but you still
9 couldn't diagnose it until they were -- you determined

10 whether or not the impairment was affecting the person's,
11 you know, life in certain ways. Is that accurate?

12 MR. MAGNANI: Objection. It is a confusing
13 question. I didn't understand it. If you can break it up.

14 THE COURT: Yeah. The objection is sustained.

15 MR. LOONAM: Okay.

16 THE COURT: It's just -- if you can just
17 rephrase it.

18 MR. LOONAM: Fine, Your Honor. Yeah. Sure.
19 Sure. Sure.

20 BY MR. LOONAM:

21 Q. So, you know, the scans, the role of neurologists,
22 the role of neuroradiologists, you see that there's --
23 after their opinion as to what the scan shows -- you know,
24 I have seen in these papers, in the right clinical setting
25 or -- or -- and is that because Alzheimer's dementia is a

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 clinical diagnosis?

2 MR. MAGNANI: Objection, Your Honor. Counsel
3 is still testifying, talking about what he is seeing in
4 papers.

02:17:24

5 THE COURT: Yeah. Can you rephrase the
6 question again?

7 MR. LOONAM: Sure.

02:17:34

8 THE COURT: Just get him to agree on what you
9 have seen as true and then ask him whether or not -- ask
10 him about the issue you want to ask him about.

11 BY MR. LOONAM:

12 Q. How do you diagnose Alzheimer's dementia?

02:17:48

13 A. So, the term "dementia" is referring to the cognitive
14 severity. So, that's dependent on the severity of the
15 cognitive issues and how they relate to the functional
16 impairment.

02:18:05

17 Alzheimer's is the reason -- is supported
18 by certain features such as age and memory loss, but in
19 our definitions, as those have changed, we have also
20 incorporated in the neuroimaging to show that there was
21 damage or neurodegeneration and the areas that correspond
22 with that.

02:18:22

23 Q. And you mentioned memory impairment. Memory
24 impairment is the most pervasive feature of Alzheimer's
25 disease. Correct?

KATHY MILLER, RMR, CRR - kathy@miller-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 A. That is, yes.

2 Q. But, in addition, other cognitive deficits can
3 manifest early in the disease. Correct?

02:18:34

4 A. Yes. Patients can have other cognitive deficits
5 besides memory loss.

6 Q. And these non-memory cognitive deficits include
7 impairment of executive function. Correct?

8 A. Are we talking about Alzheimer's disease?

9 Q. Yes.

02:18:44

10 A. I just wanted to clarify.

11 Q. Alzheimer's disease.

12 A. Yes. Some patients will have executive function
13 problems as well.

02:18:53

14 Q. And, so, can you explain for us what "executive
15 function" is?

16 A. So, those are things like decisionmaking. And, so,
17 some of the ways that we're testing it in the clinical
18 tests is we may ask someone to alternate between numbers
19 and letters. So, they have to be able to go back and
20 forth between those things and maybe generating a list of
21 words that start with a specific letter. Again, can they
22 generate those things. And, so, they're referring to
23 those types of processes.

02:19:05

24 Q. And apathy -- is apathy a symptom of Alzheimer's
25 disease?

02:19:23

KATHY MILLER, RMR, CRR - kathy@miller-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 **A.** Apathy can be a symptom of a number of different
2 diseases.

3 **Q.** And can it be a symptom of -- an early symptom of
4 Alzheimer's disease?

02:19:31

5 **A.** In some patients they will complain of apathy,
6 although it's more specific for other diseases like
7 frontotemporal dementia.

8 **Q.** Well, how does apathy manifest itself as a symptom in
9 Alzheimer's disease?

02:19:43

10 **A.** So, a patient with apathy, in general -- and I think
11 the term really just applies to any disease -- is really
12 less motivation. So, it's being less motivated and less
13 interested in certain topics.

02:19:59

14 So, someone may be not as motivated to
15 take care of their hygiene. They may be less interested
16 in things that were of interest before.

17 **Q.** And is Alzheimer's disease reversible?

18 **A.** No. Alzheimer's disease is not reversible.

02:20:19

19 **Q.** And it's -- it's progressive, meaning a trend of a
20 downward trajectory. Correct?

21 **A.** Yes. So, we expect progression in Alzheimer's and
22 these related disorders.

23 **Q.** And is it fatal?

02:20:30

24 **A.** Yes. So, typically, if a patient lives long enough
25 with Alzheimer's disease, it would be fatal.

KATHY MILLER, RMR, CRR - kathy@millers-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 Q. And do you -- do you have an understanding of the
2 average life expectancy for an individual diagnosed with
3 Alzheimer's disease?

02:20:42

4 A. Well, I think a ballpark figure for any of these
5 types of neurodegenerative disorders would be
6 approximately five to ten years.

7 Q. And in figuring out where an individual falls on that
8 range, does age of diagnosis matter?

02:21:00

9 A. Yes. In terms of mortality, the older someone is,
10 the more likely it is that they would have a death. And,
11 so, they have other health issues. You know, the average
12 life expectancy of an adult male is probably 78 or so.
13 And, so, for an 80-year-old there are many other health
14 issues that would contribute to that.

02:21:17

15 Q. And would you agree that the life expectancy for men
16 diagnosed with dementia after 70 is about four years?

17 A. I think that that's a rough estimate. I wouldn't say
18 that number specifically, but I think that that, you know,
19 is approximately similar to that, that number that I
20 stated.

02:21:34

21 Q. All right. Let's shift gears for a moment and
22 discuss delirium. You discussed delirium during your
23 direct. Mr. Brockman has had multiple episodes of
24 delirium in the past year. Correct?

02:21:49

25 A. Yes, he has.

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 Q. How many?

2 A. So, in March of 2021, he was hospitalized with a
3 urine infection and sepsis and had delirium documented at
4 that time.

02:22:02

5 In early June or beginning in late May of
6 2021, he was hospitalized for a urinary infection that
7 spread to his blood. So, he had sepsis and delirium.

02:22:17

8 And then he had another hospitalization, I
9 believe, in September of this year for about three or four
10 days where he was hospitalized with a urinary infection
11 and delirium.

12 Q. And the urinary infection, again, was urosepsis?

13 A. No. Sepsis refers to it spreading to the blood. I
14 don't believe in those documents that there was a positive
15 blood test, but I could be wrong.

02:22:32

16 Q. Okay. And you described delirium as -- the
17 symptoms -- you know, an acute variation or arousal. Is
18 that right?

19 A. Well, there are a number of things that can go along
20 with delirium. So, it's -- I think the way I described it
21 was an acute confusional state. But variations in the
22 level of arousal would be one thing that you could see
23 with that.

02:22:55

24 Q. Okay. During his -- his hospitalization from May
25 31st to June 11th, Bob was administered an antipsychotic

02:23:10

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 to treat him for his delirium. Correct?

2 **A.** Yes. I believe he was given a medicine called
3 Seroquel.

02:23:30

4 **Q.** And then during his September episode of delirium at
5 the hospital, there are reports that Bob became combative,
6 had a fall out of bed, with the staff. Correct?

7 **A.** I believe I read that in the June hospitalization. I
8 don't remember seeing that in the September
9 hospitalization.

02:23:53

10 **Q.** It could be right, actually. My apology.

11 So, anyway, Bob had three episodes of
12 delirium, to your knowledge, over a relatively short time
13 span. Correct?

14 **A.** Over the course of a year, yes.

02:24:02

15 **Q.** Well, it was from March to September?

16 **A.** March to September.

17 **Q.** Yeah. So six months?

18 **A.** Yeah.

19 **Q.** Yeah. And delirium itself is often fatal?

02:24:16

20 **A.** Delirium can be fatal. So, again, it's a sign of a
21 serious medical illness. So, anytime someone has an
22 infection that spreads to the blood, that's a very serious
23 condition.

24 **Q.** That's the sepsis, isn't it?

02:24:32

25 **A.** Yes.

KATHY MILLER, RMR, CRR - kathy@miller-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 Q. But delirium itself -- delirium itself is often
2 fatal. Do you agree with that?

3 A. So, the delirium is reflecting the severity of the
4 medical illness. So, it is when a medical illness is
5 severe enough that there is inflammation that can affect
6 the brain. That's what leads to delirium.

7 So, there is an increased association
8 between delirium and mortality, and that's because the
9 delirium reflects the severity of that medical illness.

10 Q. And the reoccurring episodes suggest that Bob's brain
11 is vulnerable. Correct?

12 A. Yes. So, an 80-year-old with Parkinson's or some of
13 these cognitive impairments -- you know, brain
14 vulnerability would be one reason why someone gets
15 delirium. Now, certainly someone with no vulnerabilities
16 could have a serious infection and also be delirious.
17 And, so, just the presence of delirium doesn't necessarily
18 tell you that, but certainly that's a risk factor for
19 developing it.

20 Q. And -- and then reoccurring bouts. So, three bouts
21 of delirium over a six-month period would strongly suggest
22 that Bob's brain is vulnerable?

23 A. Well, yes. So, I think, in the setting of these
24 infections which he continues to get, he's continued to
25 have experiences of delirium.

KATHY MILLER, RMR, CRR - kathy@millers-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 Q. Yeah. And, in fact, would you agree that delirium is
2 a marker of brain vulnerability?

3 A. I don't know that I would characterize it that way.
4 So, you know, again, I think that delirium can happen in
02:26:09 5 patients without a vulnerability, but it is certainly a
6 risk factor. So, patients who have brain vulnerabilities
7 would be at increased risk of having delirium from the
8 same infection.

9 Q. And you described -- well, what is "cognitive
02:26:23 10 reserve"? Let's make sure we have got it straight here.

11 A. So, "cognitive reserve" is referring to the brain's
12 ability or the person's ability to compensate for the
13 diseases that they have in terms of their cognition.

14 Q. And the reoccurring bouts of delirium suggest that
02:26:46 15 Bob's cognitive reserve is extraordinarily small at this
16 point. Correct?

17 A. Well, again, I think that depends on the severity of
18 the illness that he is having. And, so, when you have an
19 infection that travels into the blood, that's a very
02:27:03 20 serious infection. So, again, a normal person who has an
21 infection going to their blood, I would expect them to be
22 delirious.

23 Q. And in September I thought you said that it wasn't a
24 blood infection. It was just a urinary tract infection
02:27:19 25 that lead to sepsis -- I mean, that lead to delirium.

KATHY MILLER, RMR, CRR - kathy@millers-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 And so -- I mean, do you think -- and you
2 certainly -- Does delirium suggest that Bob has a limited
3 cognitive reserve, his reoccurring bouts of delirium?

02:27:39

4 **A.** I don't think that delirium specifically says that.
5 I think that it can go along with people with brain
6 diseases having a higher risk of delirium, but just the
7 presence of delirium itself doesn't tell you that that's
8 due to an underlying vulnerability or not.

9 **Q.** Delirium and dementia commonly coexist?

02:27:56

10 **A.** Yes. They can occur in the same patient.

11 **Q.** And commonly do?

12 **A.** So, when I am seeing patients in the clinic, no; but
13 in a hospital setting, if someone were to have delirium,
14 it's common for them to also have dementia.

02:28:12

15 **Q.** Well, is preexisting dementia the leading risk factor
16 for delirium?

17 **A.** It is certainly one of the highest risk factors for
18 delirium, yes.

02:28:21

19 **Q.** And you are not aware of whether or not it is the
20 leading risk factor for delirium?

21 **A.** I am not aware of whether it would be the leading
22 risk factor, but it is certainly a very strong risk factor
23 for developing delirium.

02:28:42

24 **Q.** So, reoccurring bouts of delirium, vulnerability to
25 delirium episodes, in and of itself can be a marker of

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 dementia?

2 **A.** I think it's marking two things. And, so, it's --
3 potentially, that would go along with someone having
4 dementia. But it's also a sign that he is having
5 recurring infections that would lead to that state.

02:28:50

6 **Q.** And a single episode of delirium can result in a
7 fundamental alteration in the trajectory of cognitive
8 decline for persons with Alzheimer's disease. Correct?

9 **A.** Yes. So, an episode of delirium can cause a
10 progression to be more accelerated than someone who has
11 not had an episode of delirium.

02:29:07

12 **Q.** And it can result in a dramatic increase in the rate
13 of cognitive decline, a single episode. Correct?

14 **A.** A single episode can accelerate the course of
15 dementia.

02:29:26

16 **Q.** And the -- you know, multiple episodes, do you know
17 whether the rate of increase in the progression is linear
18 or exponential?

19 **A.** I don't know that -- I'm not aware of any studies
20 that looked at whether more than one episode of delirium
21 increases that risk more.

02:29:44

22 **Q.** What is your understanding of how much one episode of
23 delirium increases the rate of progression for Alzheimer's
24 disease?

25 **A.** I don't have a specific number for that.

02:30:00

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 Q. Well, will you agree there are studies that find that
2 it is over two times?

3 A. Again, I am not aware of the studies.

4 Q. So, you don't know?

02:30:16

5 A. No.

6 Q. Do you know whether or not -- Once the rate of
7 decline is increased after an episode of delirium, it's
8 irreversible. Correct?

02:30:37

9 A. So, once a patient has recovered from the delirium,
10 from those acute changes, if there is a progression over
11 time, I would not expect that to be reversible.

12 Q. Okay. Is your expectation based on any academic
13 literature?

14 A. Not anything specifically.

02:31:14

15 MR. LOONAM: One moment, Judge.

16 THE COURT: Sure.

17 BY MR. LOONAM:

18 Q. Are you familiar with the journal *The Archives of*
19 *Internal Medicine*?

02:32:02

20 A. I'm not sure if I have specifically heard of that
21 journal, but it sounds like a journal that would exist.

22 Q. Published by the American Medical Association.

23 A. Yes. I have heard of the American Medical
24 Association.

02:32:14

25 Q. Okay.

KATHY MILLER, RMR, CRR - kathy@miller-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 MR. LOONAM: I'll mark it -- do we have
2 stickers there? This is just for identification, Judge.

3 THE COURT: Okay.

4 BY MR. LOONAM:

02:32:43

5 Q. It's marked for identification as Defense Exhibit 49.
6 Are you able to see this?

7 A. No.

8 THE CASE MANAGER: Bear with me.

02:33:41

9 MR. LOONAM: Actually, this is an easier one
10 for us to do. We will get through it quicker. I am going
11 to mark this Defense Exhibit 50.

12 BY MR. LOONAM:

13 Q. Are you familiar with the journal *Lancet Neurol*?

14 A. Yes, I am.

02:34:04

15 Q. And that is a reputable journal?

16 A. Yes.

17 Q. *Lancet* is one of the most respected medical journals
18 in the country?

19 A. Yes. I think the *Lancet* journal is a very respected
20 journal.

02:34:16

21 Q. I am going to show you what is marked as Government's
22 Exhibit 50. Can you see that?

23 A. Yes, I do see that.

24 Q. Okay. It's an article titled "The Interface of
25 Delirium and Dementia in Older Persons."

02:34:25

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 **A.** Yes, that is the title I see.

2 **Q.** Yeah. And the author is Fong?

3 **A.** Yes, Tamara Fong.

4 **Q.** I'll show you the highlighted sections here.

02:34:43

5 It says: "Delirium is a syndrome
6 manifesting as an acute change in mental status that is
7 characterized by inattention and disturbance in cognition
8 that develops over a short period of time and tends to
9 fluctuate." Do you agree with that?

02:35:00

10 MR. MAGNANI: Objection --

11 THE COURT: Okay.

12 MR. MAGNANI: -- just to -- apologies, Your
13 Honor -- just to the extent he is asking the witness about
14 an article the witness has never seen before. If he wants
15 to ask whether he agrees to a statement, that's one thing,
16 but to read from a journal article that is not in
17 evidence --

02:35:08

18 MR. LOONAM: I just read and said does he
19 disagree with it.

02:35:18

20 MR. MAGNANI: If you want to just ask him a
21 question and ask if he agrees with that statement, that's
22 one thing, but --

23 THE COURT: Wait a second. What is the
24 objection?

02:35:24

25 MR. MAGNANI: The objection is that he is

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

02:35:39

1 reading from a piece of paper that is not in evidence. If
2 he wants to impeach by asking the doctor if he agrees with
3 a certain proposition, he can ask the doctor without
4 flashing around journal articles that are not in any expert
5 reports.

02:35:51

6 MR. LOONAM: Your Honor, Federal Rule of
7 Evidence 803(18) (A), it's a learned treatise, periodical or
8 pamphlet on the cross-examination of an expert witness.
9 The rules specifically provide for this.

02:36:07

10 THE COURT: Yes. I'm sorry. So, you can use
11 it, but it's the way you are using it that I have a
12 question about. I mean, you need to lay a foundation. And
13 you have gotten most of the way there, but you need to ask
14 him whether or not -- you need to ask him the question that
15 the treatise addresses and whether he agrees with it or
16 not, and then you can go into the treatise.

02:36:26

17 MR. LOONAM: I asked him if he agreed on
18 whether the rate of progression for a single episode of
19 dementia -- of a single episode of delirium increased the
20 decline and progression of dementia two-fold. Right? And
21 he said no.

22 THE COURT: That's the question. And then his
23 answer?

24 BY MR. LOONAM:

02:36:37

25 Q. Your answer was? I'll ask the question.

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 **A.** So, that was to whether I agreed with that number,
2 and I said I didn't -- I believe I said I didn't know or
3 didn't have a number.

02:36:46

4 THE COURT: Okay. And this is going to provide
5 a number?

6 MR. LOONAM: Is going to provide a number.

7 THE COURT: Okay. Objection overruled.

8 You may proceed.

9 BY MR. LOONAM:

02:36:55

10 **Q.** I'll show you the highlighted section here.

11 "Delirium resulted in a fundamental alteration in the
12 trajectory of cognitive decline with a two-fold
13 acceleration in" --

02:37:08

14 THE COURT: One second. It's out of focus.
15 It's giving everybody a headache. So, can you just --

16 MR. LOONAM: Thank you, Judge. How do I do it?

17 THE COURT: There we go.

18 MR. LOONAM: Thanks, Judge.

19 BY MR. LOONAM:

02:37:32

20 **Q.** "Delirium resulted in a fundamental alteration in the
21 trajectory of cognitive decline with a two-fold
22 acceleration in rate of decline over the year following
23 hospitalization and accelerated decline persisting over
24 the entire five-year follow-up period. The study was
25 highly significant in demonstrating that in persons with

02:37:51

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 AD" -- Alzheimer's disease -- "delirium resulted in a
2 dramatic increase in the rate of cognitive decline over
3 time and this change appeared to be irreversible."

02:38:12

4 Do you have any reason to question the
5 findings recorded in this study?

6 **A.** Well, I would need to look at that actual study. So,
7 this is citing a different study, I believe.

8 **Q.** Yeah. It's right here. This is Government's Exhibit
9 49.

02:38:26

10 MR. MAGNANI: And objection again, Your Honor,
11 this time on 403 grounds. These are long studies. To ask
12 the witness to give opinions on studies he has never read
13 is 403, Your Honor. It just a waste of the Court's time
14 and its probative value is substantially outweighed by
15 that.

02:38:40

16 THE COURT: Well, no. He can ask -- he can ask
17 the question about the treatise. The witness -- if the
18 witness needs more time to look at it, he can ask for more
19 time. If the witness wants to look at something in the
20 treatise, the witness can ask for it. But he can -- but he
21 can question the witness about it, and the witness can ask
22 for more time if he needs it.

02:38:53

23 MR. MAGNANI: Oh, apologies. One more thing.
24 I believe, counsel, you might have said "Government."

02:39:08

25 MR. LOONAM: Defense exhibit. I just got that

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 note. Old habits die hard, Judge. Twelve years.

2 THE COURT: Okay.

3 BY MR. LOONAM:

02:39:17

4 Q. So, I am showing you Defendant's Exhibit 49. You had
5 stated you had wanted to see the article they were
6 referring to. This is the article they were referring to.
7 This is *The Archives of Internal Medicine*. The title is
8 "Delirium and Long-Term Cognitive Trajectory Among Persons
9 with Dementia." Do you see that?

02:39:33

10 A. Yeah. It's cutting off on the screen here.

11 Q. Oh. Let's get it so you can see it. Is that better?

12 A. I see it on this larger screen.

13 Q. Okay.

14 A. I think it cuts off the side on this screen.

02:39:43

15 Q. Let me see if I can -- Is that okay for you now?

16 A. I can see the title, yes.

17 Q. Okay. And I'll just use a highlighted version which
18 will make it easier for everyone.

02:40:12

19 So, the background of the study is: "We
20 examined the association of delirium with long-term
21 cognitive trajectories in older adults with Alzheimer's
22 disease." Correct?

23 A. That's what is highlighted.

02:40:38

24 Q. I'll take you right to the findings here. And we can
25 provide this study to you, but it's -- it reads in the

KATHY MILLER, RMR, CRR - kathy@miller-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

02:40:59

02:41:27

02:41:40

02:41:58

02:42:07

1 highlighted portion: "This deterioration was
2 significantly greater in the delirium group, difference,
3 1.7," and then some statistics, "and remains so through
4 the end of the study period. The ratio of these group
5 differences suggested that delirium is associated with a
6 2.2-fold increased rate of cognitive deterioration in
7 the" -- "in the year following the index hospitalization,
8 and with a 1.7-fold increase rate of cognitive
9 deterioration during the five-year period following the
10 index hospitalization. We could normalize this for the
11 gender."

12 Does gender usually play an issue in rates
13 of decline for dementia?

14 **A.** So, we would always evaluate gender, age, other
15 factors.

16 **Q.** Yeah. Yeah. So -- so -- but do you have any reason
17 to question the -- the -- the summary -- the description
18 of this article I read to you before where it said the
19 trajectory of cognitive decline -- and this is
20 Government's Exhibit 50 -- is a two-fold acceleration
21 rate?

22 **A.** Again, I would have to read the entire article to
23 comment on that.

24 **Q.** You don't know?

25 **A.** Correct. I have not read that article.

KATHY MILLER, RMR, CRR - kathy@miller-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 Q. And if that's what happens with respect to one
2 episode of delirium, you don't know what would happen with
3 two episodes of delirium with respect to the rate of
4 cognitive decline. Correct?

02:42:26

5 A. I'm not aware of a specific study that has looked at
6 that.

7 Q. And you are not aware of a specific study that has
8 looked at it that would inform your judgment on that
9 issue, then. Correct?

02:42:37

10 A. Correct. I would not be relying on any piece of
11 literature for that.

12 Q. And then, certainly, with three episodes of delirium,
13 you wouldn't have -- you are not aware of a study that
14 would support your judgment on how three episodes of
15 delirium would affect an individual's rate of decline?

02:42:57

16 A. I am not aware of any studies that looked at three
17 episodes of delirium versus one.

18 Q. And so -- Okay. You had the -- there was a scale up
19 on your slides that -- that listed the different
20 severities for dementia before, in your slide deck. Do
21 you recall that?

02:43:35

22 A. Yes. I believe so. Oh. Yes.

23 Q. And where was that taken from? Was that -- was
24 that -- That was a summary document. That wasn't a
25 scientific document, was it?

02:43:52

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 **A.** No. So, that was not taken from a specific source.

2 It was kind of a summary of examples from various sources
3 and based on my experience as well.

02:44:06

4 **Q.** All right. So, that -- that -- that's made up? That
5 is not sort of an actual scale?

6 **A.** The scales -- the -- I'm not sure I quite understand
7 your question.

02:44:21

8 **Q.** I am saying this -- this -- the dementia severity --
9 and you have listed mild cognitive impairment and then
10 sort of with a description underneath it, mild dementia
11 with a description underneath it, moderate dementia with a
12 description, and severe dementia. That's -- this doesn't
13 come from some source where they -- they rank these
14 things?

02:44:36

15 **A.** Those aren't specific criteria. Those are examples
16 of problems that may happen in a patient with that state
17 of severity.

18 **Q.** Are you aware of the clinical dementia rating scale?

19 **A.** Yes.

02:45:04

20 **Q.** And that actually has formal criteria for
21 distinguishing between mild dementia, moderate dementia,
22 severe dementia, mild cognitive impairment. Correct?

02:45:28

23 **A.** Well, the -- the clinical dementia scale is a
24 clinician's estimate of six different categories of
25 problems: memory, orientation, ability to do different

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

02:45:51

1 functions. It's rated on a scale from zero being normal
2 to 0.5 being very mild, and then 1, 2, 3 being mild,
3 moderate, severe. And there is, I believe, an algorithm
4 to take those numbers and turn them into a global measure
5 or a global CDR number.

02:46:03

6 **Q.** And do you agree it is one of the widely accepted
7 means for categorizing where a patient is on the continuum
8 of decline for dementia?

9 **A.** It is -- it is one of the things that we use in our
10 clinical research studies.

11 **Q.** Well, in addition to clinical research studies, do
12 clinicians use it in -- in, you know, sort of categorizing
13 where, you know, patients fall with respect to their level
14 of impairment?

02:46:18

15 **A.** That is one of the ways that a clinician would
16 evaluate that.

17 **Q.** And it considers performance in six domains. Do you
18 know what they are?

02:46:31

19 **A.** I believe it's memory, orientation. There is a
20 domain for personal care, home and hobbies, other
21 activities of daily living. I can't remember the last
22 category.

23 **Q.** Sure. Judgment?

24 **A.** Judgment.

02:46:42

25 **Q.** Problem solving?

KATHY MILLER, RMR, CRR - kathy@miller-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 A. Judgment and problem solving.

2 Q. Yeah.

3 A. There's different versions that include domains for
4 behavior and language in the frontal type of dementia as
5 well.

02:46:55

6 Q. Well, are you familiar that the definitive version
7 comes from Morris, do you know, from Washington?

8 A. From the Your University of Wash --

9 Q. Yeah.

02:47:03

10 A. -- from Washington University?

11 Q. Yeah. And it's put out by John Morris.

12 A. I believe he was the first person that developed it,
13 yes.

02:47:43

14 MR. LOONAM: And 51. I am marking it as 51 for
15 identification. I'm just going to put it on the ELMO.

16 THE COURT: Counsel, have you already -- I
17 mean, I'm just -- I want to make sure. You have already
18 seen this or have you taken a look at it?

02:47:59

19 MR. MAGNANI: No. I want to see it on the
20 screen, Your Honor. I am not too concerned with any of it,
21 though.

22 THE COURT: I just wanted to know if you wanted
23 to see it before it was put on the screen. No problem.

24 MR. MAGNANI: If you proffer it --

02:48:07

25 MR. LOONAM: Yeah. It's in the folder. I just

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 don't want to waste anyone's time.

2 THE COURT: Okay. It's not a problem.

3 BY MR. LOONAM:

4 Q. Do you recognize this?

02:48:19 5 A. Yes. This is referring to the clinical dementia
6 ratings scale.

7 Q. And it has "severe dementia" all the way to the far
8 right, "moderate dementia," "mild dementia,"
9 "questionable." Is that -- would that be associated with
02:48:41 10 mild cognitive impairment?

11 A. Yes. For the global measure, 0.5 is typically
12 considered to be mild cognitive impairment.

13 Q. And then none is zero there. Correct?

14 A. Correct.

02:48:54 15 Q. And if you -- you look at this, in the progression,
16 in the first column, it lists, you know, the different
17 domains that we discussed. And if we go across them
18 for -- for memory and you go to "mild dementia," the
19 memory -- the clinical symptom for mild dementia is
02:49:27 20 "moderate memory loss, more marked for recent events. A
21 defect interferes with everyday activities." Correct?

22 A. That's what it states here, yes.

23 Q. And, so, it's not intuitive, that, you know, mild
24 dementia doesn't result in -- isn't associated with mild
02:49:48 25 memory issues. It's associated with moderate memory

KATHY MILLER, RMR, CRR - kathy@millers-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 issues according to the scale. Correct?

2 **A.** Yes. I think it's important to consider the scale
3 was developed for the assessment of Alzheimer's disease.
4 And, so, for Alzheimer's disease specifically the memory
02:50:02 5 is the earliest and most predominant feature; and, so,
6 it's designed with that in mind.

7 **Q.** And if you go down to "Judgment and Problem-Solving"
8 for mild dementia and you go across, it says: "Moderate
9 difficulty in handling problems, similarities and
02:50:21 10 differences, social judgment usually maintained."

11 So, again, mild dementia is associated
12 with moderate difficulty in problem-solving and judgment?

13 **A.** And that is where I would say that examples like
14 financial decisionmaking, the ability to work, that's
02:50:39 15 where those would be affected.

16 **Q.** So, financial decisionmaking. Is that why, you know,
17 people with early Alzheimer's are often victims of
18 financial scams?

19 **A.** That can be one reason. There is also an increased
02:50:53 20 social trust that can happen in older persons that makes
21 them more vulnerable to those.

22 **Q.** And if you combine that with Alzheimer's, it means a
23 person can be extraordinarily vulnerable, I would expect.

24 **A.** Yes. Anytime someone is having a cognitive problem
02:51:11 25 that can lead to a vulnerability.

KATHY MILLER, RMR, CRR - kathy@miller-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 Q. And certainly somebody with moderate memory problems
2 could have a problem -- could have an issue and could have
3 an impairment in communicating relevant information to
4 counsel. Correct?

02:51:24 5 A. Can you restate that?

6 Q. Sure. An individual with moderate memory problems
7 could have an impairment in communicating relevant
8 information to counsel?

9 A. I think it depends on the specifics of the memory
02:51:38 10 problem.

11 Q. But, if it's a moderate memory problem, you don't
12 think that that, in and of itself, means that the person
13 could have a problem communicating relevant information to
14 counsel?

02:51:48 15 A. It would say what it states here, which is that there
16 would be difficulty with remembering recent events. So,
17 to the extent that that would interfere with helping
18 counsel, then, yes, that would be present.

19 Q. And, so, you know, if counsel gives advice to a
02:52:07 20 client and the client can't remember that advice, do you
21 think that would interfere with the ability to advise that
22 client?

23 MR. MAGNANI: Objection, Your Honor. This is
24 an opinion question that is beyond the scope of his
02:52:22 25 expertise. He hasn't been designated as any competency

KATHY MILLER, RMR, CRR - kathy@millers-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 expert, and he has said on direct he doesn't know much
2 about that.

3 THE COURT: I guess the objection is sustained
4 in part. I mean, what you can ask him -- you can ask him
02:52:33 5 specific things like would he be able to understand
6 questions? Would he be able to understand the contents of
7 documents? But whether or not he would be able to
8 communicate regarding legal issues -- I don't know how this
9 witness can testify about that. He can testify about
02:52:48 10 specific skills that Mr. Brockman might or might not have,
11 and you can ask about that.

12 MR. LOONAM: I can -- Yes, Your Honor. Yes,
13 Your Honor.

14 THE COURT: So, go ahead and break it down.

02:52:59 15 MR. LOONAM: Sure.

16 BY MR. LOONAM:

17 **Q.** And, so, somebody with moderate memory issues such
18 that it is more marked for recent events, that doesn't
19 exclude having memory issues for remote events?

02:53:16 20 **A.** Well, it follows a phenomenon we call Ribot's law.
21 And, so, the recent memories are the things that are going
22 to be damaged first and the most significantly. So,
23 typically, the farther away that is from the recent time
24 the more likely it is the patient is going to be able to
02:53:32 25 remember it.

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 Q. So, for example, a client hearing a witness'
2 testimony may not be able to give his input on
3 cross-examination to his counsel?

02:53:49

4 MR. MAGNANI: Objection, Your Honor. The same
5 objection.

6 THE COURT: Yeah. I mean, the -- the objection
7 is sustained.

02:54:03

8 I mean, you can ask him about specific
9 skills but not general, you know, what a client could or
10 could not do.

02:54:14

11 I mean, you know, could he answer a
12 question regarding whether or not something happened or
13 didn't happen on a certain date? Yes or no. Could he
14 respond on whether or not he signed or didn't sign a
15 document? Yes or no. But you can't ask the question,
16 'Well, would he not be able to help his counsel represent
17 him adequately at trial?' That is beyond the scope of this
18 witness' testimony.

02:54:28

19 MR. LOONAM: Okay, Your Honor. I will say I
20 think in the expert report the witness did opine on
21 whether -- or decided he couldn't opine on Mr. Brockman's
22 cognitive ability and, therefore, couldn't reach the issue
23 of whether he was competent to assist counsel, but I
24 believe reached that issue previously in his first report.

02:54:51

25 So -- but, nevertheless, I'll ask it this way.

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 BY MR. LOONAM:

02:55:12

2 Q. Dr. Darby, somebody with moderate memory issues, who
3 is hearing information, may have an issue retaining that
4 information to -- to convey it or to convey their analysis
5 of that information to another person. Correct?

02:55:29

6 A. So, someone at this mild stage of memory problem,
7 having these moderate memory issues, would have the most
8 difficulty remembering something that's happened now and
9 remembering that in the future. They would have less of a
10 problem remembering things that are farther in the past.

02:55:50

11 Q. But if they were hearing somebody speak now, right,
12 and then having to -- they would have issues retaining
13 that, to then address the consequences or the import of
14 whatever was said to another person, that would be an
15 issue?

16 A. It would depend on the timing between that. And, so,
17 you know, at a time after they initially heard that, they
18 would have difficulty retaining that memory. That would
19 be the memory problem.

02:56:02

20 Q. And if you have moderate difficulty solving problems,
21 you would have -- you could have issues processing complex
22 sets of facts. Correct?

02:56:27

23 A. Yes. So, at this one rating scale that you are
24 referring to, that would be where you would need
25 assistance to help with things like financial

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 decisionmaking and that the complexity of certain types of
2 jobs would be impacted where someone wouldn't be able to
3 do that independently.

02:56:45

4 **Q.** Now, when you move to "moderate dementia" and you
5 looked for --

02:57:00

6 **A.** So -- I just want to clarify it. So, these are in
7 each individual category, but there is actually an
8 algorithm that takes those numbers and turns it into a
9 global dementia number. And, so, you know, being in one
10 of those categories or two doesn't necessarily mean that's
11 the moderate dementia. It is moderate in that category.
12 I don't know the specifics of the algorithm to calculate
13 that.

02:57:12

14 **Q.** No. But I am talking that -- but that's -- this is
15 the -- this is the criteria for that domain, for that
16 category of dementia?

17 **A.** So, that --

02:57:30

18 **Q.** You need not have all of the categories in order to
19 fill. That's the algorithm, right? But this is --
20 according to the -- the CDR, that is the level of decline
21 in that domain for that level of dementia?

02:57:50

22 **A.** I don't think that's accurate to what -- to what it's
23 stating. So, that's the level of severity in that domain.
24 And then the global -- So, there is a summary number that
25 comes out of this that refers to the actual dementia

KATHY MILLER, RMR, CRR - kathy@miller-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 stage.

2 Q. But that's the -- but that's the severity with
3 respect to that domain. Correct?

4 A. Correct.

02:57:58

5 Q. Yes.

6 When you move to "moderate dementia," the
7 memory issues aren't moderate. It's severe memory loss,
8 correct?

02:58:10

9 A. And, again, are you referring -- is the moderate
10 severity within the memory domain?

11 Q. In the memory domain, if you go across to
12 "moderate" --

13 A. Yes.

14 Q. -- it is severe memory loss. Correct?

02:58:17

15 A. Correct. That's what that says.

16 Q. I am pointing it out because it is not intuitive.
17 When you hear "moderate dementia," you would think
18 moderate memory loss, but this is associated with severe
19 memory loss. And it says "only highly learned material
20 retained."

02:58:32

21 So, what is that? Once you cross into the
22 "moderate dementia" category, that only -- at that point
23 only highly learned material is retained, how does that
24 happen?

02:58:41

25 A. Well, that's referring to some of the examples that

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

02:58:55

1 were on the slide. So, things like not recognizing a
2 grandchild. So, someone who has been more recently
3 introduced or a friend who is not as close. It may be
4 forgetting things like addresses and phone numbers that
5 can be affected. So, those are some of the examples of
6 not recognizing people, kind of not being able to retain
7 those things.

02:59:14

8 **Q.** But -- but it -- it would go beyond that. It is only
9 highly learned information that's retained. And, so, do
10 you have an example of highly learned information?

11 **A.** So, a patient's birth date would be an example of
12 that.

13 **Q.** So, somebody would remember their birthday?

14 **A.** Correct.

02:59:26

15 **Q.** But -- but they may not remember, you know, going to
16 dinner two weeks ago?

17 **A.** Correct. They would have difficulty remembering the
18 specifics of where they went to dinner two years [sic]
19 ago.

02:59:43

20 **Q.** And they would have difficulty remembering a
21 conversation from six months ago?

22 **A.** I imagine, yes, that they would have difficulty
23 remembering a conversation.

02:59:59

24 **Q.** Highly learned material, can that be by subject
25 matter where somebody sort of dives into something and

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 that's their passion and that becomes highly learned
2 material?

3 **A.** That can be a type of highly learned material.

03:00:12

4 **Q.** And is it because, when it is highly learned, it is
5 coded in different parts of the brain sort of redundant so
6 that when there is recall, it can go from -- if there is
7 brain damage, it may exist somewhere else?

03:00:27

8 **A.** Well, there still may be difficulty with the recall.
9 So, I think that's a separate issue. But it is coded in a
10 way that it's represented in different parts of the brain.

11 **Q.** Yes. So, there's a redundancy with respect to highly
12 learned information. Correct?

13 **A.** Yes. It's just represented in a different way.

03:00:41

14 **Q.** All right. And by the time you get to severe memory
15 loss -- I mean, severe dementia with respect to the memory
16 domain, it's still severe memory loss, but it's described
17 as only fragments remain. And, so, what does that look
18 like?

03:00:56

19 **A.** I mean, that might be a patient who is in a nursing
20 home and, so, is having difficulty recognizing their
21 familial loved ones, like a spouse, that they would have
22 otherwise.

03:01:09

23 THE COURT: Counsel, we have been going an hour
24 and half. So, we are going to go ahead and take our break
25 now. I am going to suggest 15 minutes. If you guys need a

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

03:01:24

1 little bit longer, please let me know. I know that
2 everyone has their concerns about getting people back and
3 forth. So, if anyone needs longer than that, just let my
4 case manager know and we can take longer. But if we can
5 all be back at 3:15, and then we will push on through the
6 rest of the afternoon.

7 MR. LOONAM: Thank you, Judge.

8 (Proceedings recessed from 3:01 to 3:28)

9 THE CASE MANAGER: All rise.

03:28:40

10 THE COURT: Please be seated, everyone.

11 MR. LOONAM: Your Honor, just one or two more
12 questions on Exhibit 51, and I am going to move on.

13 THE COURT: Okay. You may proceed when ready.

14 MR. LOONAM: Thank you, sir.

03:28:54

15 BY MR. LOONAM:

16 Q. I am putting Exhibit 51 back on the screen. Can you
17 see that?

18 A. I can. The -- the -- it's the right side, the
19 "severe," I can't see on my screen, though. Yeah. Most
20 likely I can see the table.

03:29:09

21 Q. Okay. So, for the "personal care" domain, it may be
22 self-explanatory, but what is your understanding of what
23 that is?

03:29:25

24 A. So, that's referring to a patient's ability to take
25 care of themselves.

KATHY MILLER, RMR, CRR - kathy@miller-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 Q. And that's impacted by the severity of dementia.

2 Correct?

3 A. Yes. So, dementia can impact the patient's ability
4 to do personal care.

03:29:45

5 Q. And for -- for "mild cognitive impairment," the
6 person just is fully capable of taking care of themselves,
7 correct, as to this domain?

8 A. Yes.

03:30:06

9 Q. And for the "mild dementia" category, for the
10 "personal care" domain, the person needs prompting to --
11 to take care of themselves?

03:30:20

12 MR. MAGNANI: Objection, Your Honor. It's a
13 lot of times that counsel keeps saying the mild dementia
14 range, but the witness has said many times that the words
15 on the top like "mild," "moderate," and "severe" don't
16 correspond to dementia. And counsel keeps repeating "the
17 mild dementia range," the "moderate dementia range."

03:30:38

18 MR. LOONAM: No, I don't think he said that. I
19 think what he said was that each individual category and
20 domain gets scored and you wind up with a global score at
21 the end that's attributable to -- but for the -- for each
22 domain it's associated with a certain degree of dementia.

03:30:58

23 A. No. So, it's the impairment. And, so, it's a mild,
24 moderate, or severe impairment. And then that is
25 calculated into a global measure that defines the dementia

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 rating. So, the global CDR is what refers to the level of
2 dementia.

3 Q. Uh-huh.

4 A. Within each domain we would refer to that as the
5 level of impairment in that domain.

03:31:10

6 Q. Okay. So, for somebody --

7 THE COURT: Thank you, Doctor.

8 Q. -- with moderate impairment, they would require
9 assistance in dressing, hygiene, keeping of personal
10 effects?

03:31:21

11 A. Yes. That's what it says here.

12 Q. And for -- with severe impairment, the person would
13 require much help with personal care, and they would have
14 frequent incontinence. Correct?

03:31:33

15 A. Yes. That's what it says here.

16 Q. And -- Okay.

17 MR. LOONAM: Just collect it at the end?

18 MR. MAGNANI: Yes.

19 BY MR. LOONAM:

03:31:59

20 Q. Let's talk about the neural imaging. I know you
21 talked about it a lot on direct, but let's cover it for a
22 bit.

23 In March you asked Mr. Brockman to undergo
24 a PET scan?

03:32:09

25 A. An FDG PET scan, yes.

KATHY MILLER, RMR, CRR - kathy@millers-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 Q. Yeah. And you requested the PET, at least in part,
2 to see if there was objective evidence that Bob had a
3 neurodegenerative disease. Correct?

03:32:26

4 A. Yes. I thought it would be helpful in this case for
5 looking for evidence of neurodegeneration.

6 Q. And Bob submitted to that PET scan on March 12th,
7 2021?

8 A. Yes. I believe so.

03:32:42

9 Q. And the scan was read and interpreted by a nuclear
10 medicine specialist at Houston Methodist Hospital.
11 Correct?

12 A. Yes. That's the report we looked at earlier.

13 Q. And that -- the specialist was Dr. Ronald Fisher. Do
14 you recall that?

03:32:55

15 A. I don't recall the specific name of the radiologist
16 who read it.

17 Q. Do you think if I show you the scan, would it refresh
18 your recollection or --

03:33:08

19 A. Yeah. I mean, whatever was on the page would be what
20 the name was.

21 Q. Okay. So --

22 A. I don't remember that off the top of my head.

23 Q. So, for efficiency, you can take my word that it was
24 Dr. Ronald Fisher.

03:33:16

25 A. That wouldn't sound surprising.

KATHY MILLER, RMR, CRR - kathy@millers-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 Q. And, to your knowledge, Dr. Fisher was not retained
2 by -- by either party, right?

3 A. Not that I know of.

4 Q. And that -- Dr. Fisher just happened to be on duty at
5 Houston Methodist to read the scans?

6 A. So, yes, typically, it would be whoever was the
7 radiologist in charge of reading those scans that day that
8 would interpret it.

9 Q. And you have no reason to question Dr. Fisher's
10 competence. Correct?

11 A. No.

12 Q. You have no reason to believe that Dr. Fisher was
13 unduly influenced in interpreting the scan, do you?

14 A. No. I would have no reason to believe that.

15 Q. And, in looking at the scan, the report stated that
16 the findings are very mild but suggestive of early
17 neurodegenerative disease, either Alzheimer's disease or
18 dementia with Lewy bodies, Parkinson's disease with
19 dementia. Correct?

20 A. That is, I believe, what was stated in the
21 impressions, yes.

22 Q. And that's DX-39. Do you have your June 18 th, 2021,
23 report in front of you or not?

24 A. No.

25 Q. Okay. It's Government's Exhibit 38.

KATHY MILLER, RMR, CRR - kathy@miller-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 MR. LOONAM: May I approach, Your Honor?

2 THE COURT: You may approach.

3 MR. LOONAM: It is an unmarked copy. Do you
4 have a copy of this?

03:35:16

5 BY MR. LOONAM:

6 Q. Can you look at Page 7 of your report and locate the
7 paragraph that discusses the March 12th, 2021, scan?

8 A. Yes.

03:35:48

9 Q. Okay. Now, you did not include this paragraph here
10 in your report that "The findings are very mild but
11 suggestive of early neurodegenerative disease, either
12 Alzheimer's disease or dementia with Lewy bodies,
13 Parkinson's disease with dementia." You didn't quote that
14 in your report. Correct?

03:36:03

15 A. No, I didn't quote it here.

16 Q. Okay. And this paragraph appears in sort of like a
17 medical -- a neurological history of Mr. Brockman.
18 Correct?

19 A. This was in the history of reviewed information, yes.

03:36:20

20 Q. Yeah. So -- so, basically, the doctors' notes, the
21 hospitalization records, those are described here.
22 Correct?

23 A. Yes. This describes the hospital records and the
24 diagnostic tests, in addition to other things.

03:36:41

25 Q. And Dr. Fisher did not indicate mild cognitive

KATHY MILLER, RMR, CRR - kathy@miller-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 impairment in his report. Correct?

2 **A.** No.

3 **Q.** And the scan showed hypometabolism in the right
4 parietal lobe?

03:36:57

5 **A.** Yes.

6 **Q.** And hypometabolism shows neuronal -- neuronal -- I am
7 going to mispronounce that -- but a dysfunction of the
8 neurons. Correct?

03:37:11

9 **A.** So, it's indicative of brain dysfunction or brain
10 damage, yes.

11 **Q.** Basically, the neurons aren't eating?

12 **A.** That area of the brain is not using as much energy as
13 it normally would.

14 **Q.** The brain runs on, basically, pure sugar?

03:37:25

15 **A.** It's a little more complicated than that, but as a
16 general rule, yes. The sugar is the source of energy for
17 the brain.

18 **Q.** By the way, what is -- is most of the brain made up
19 of neurons or some other substance?

03:37:36

20 **A.** There are other things that are in the brain as well.

21 **Q.** What's the -- what percentage of the brain consists
22 of neurons?

23 **A.** I don't know what the exact percentage is. It would
24 probably differ if you were going by weight or the number

03:37:51

25 of cells. But there are a number of other cells that are

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 in the brain that support the function of the neurons, the
2 blood vessels going to different areas.

3 Q. I am going to mispronounce this, but are there "gu"
4 cells? "Gu"?

03:38:05

5 A. I am --

6 Q. Well, tell me what does the brain mostly consist of?

7 A. Are you saying "glial"?

8 Q. "Glial."

03:38:15

9 A. Oh, yes. Glial is a type of cell that can be in the
10 brain.

11 Q. And what type of -- what percentage of the brain is
12 consisted of glial?

13 A. I don't know off the top of my head what that
14 percentage would be.

03:38:22

15 Q. Are neurons a small percentage of -- of the brain
16 cells?

17 A. I think, again, that would depend on if you are
18 talking about the weight, the size, or the number of the
19 neurons. It is certainly a part of the body. So, the
03:38:37 20 neurons are not the only thing there. There are a number
21 of cells that are supporting the neurons, and then there
22 are cells that are involved in blood transfusions for
23 those areas, among other things.

24 Q. Keep the neurons healthy, hopefully. Right?

03:38:51

25 Okay. You -- you wrote in your report,

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 back on Page 7 -- I'm sorry -- if you want to flip --
2 because I want to make sure you're back on Page 7 at the
3 paragraph. Are you there?

4 **A.** Yes.

03:39:04

5 **Q.** Okay. You wrote in your report that "These findings
6 do not fit the typical pattern seen in dementia with Lewy
7 body, Parkinson's disease dementia, or Alzheimer's
8 disease." Do you see that?

9 **A.** Yes, I see that.

03:39:20

10 **Q.** All right. So, now, that was your opinion, not
11 Dr. Fisher's opinion. Correct?

12 **A.** Correct. I was, again, comparing it to that image I
13 have in my head of what the normal, typical patient with
14 Alzheimer's disease dementia would look like.

03:39:38

15 **Q.** And that opinion somewhat contradicts Dr. Fisher's
16 finding that the PET suggested either Alzheimer's disease
17 or Parkinson's disease dementia. Correct?

18 **A.** Well, I think that it could suggest early Alzheimer's
19 disease. Again, with the term Lewy body or Parkinson's
03:39:56 20 disease dementia, the most specific thing would be the
21 occipital lobe findings, which were not present in this
22 case. So, I think it can go along with those diseases,
23 but doesn't fit the classic pattern that we would normally
24 see.

03:40:09

25 **Q.** You're talking about the -- the typical pattern of

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 where you see impairment in the different regions of the
2 brain. Is that accurate?

3 **A.** Yes.

03:40:26

4 **Q.** Okay. Do you reference that in your report, like
5 what, you know, you support for that proposition at all?

6 **A.** I do not mention the different parts of the brain
7 that I -- in this paragraph. I'm not sure if I mention
8 them other places.

03:40:47

9 **Q.** Okay. You are not sure if it's in your report at
10 all, either your supplemental report or your original
11 report?

12 **A.** I don't recall if I had mentioned the specific areas
13 of the brain.

03:41:03

14 **Q.** The specific areas of the brain or any scientific
15 support for the idea that there is a typical pattern for
16 Alzheimer's disease in the brain.

17 **A.** Are you asking if I cited any papers?

18 **Q.** Yes.

19 **A.** So, I did not cite any papers.

03:41:20

20 **Q.** You didn't cite any papers in any of your reports?

21 **A.** I don't believe I cited any papers regarding that
22 issue.

03:41:41

23 **Q.** So -- Okay. Now, neuroimaging studies of Parkinson's
24 disease dementia and Alzheimer's disease have both been
25 particularly heterogenous. Correct?

KATHY MILLER, RMR, CRR - kathy@millers-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 **A.** That is one thing that you would look at in terms of
2 studies, is the heterogeneity of the sample itself. I'm
3 not sure if that's what you're referring to.

03:41:57

4 **Q.** Well, it could be heterogenous with respect to the
5 groups but then, also, when you boil it down to the
6 individual level, isn't that correct?

7 **A.** There can be heterogeneity in terms of individual
8 patients and where they have abnormalities.

03:42:13

9 **Q.** And, in fact, in Parkinson's disease dementia,
10 hypometabolism has been reported in the frontal, temporal,
11 parietal, occipital, insular cortices as well as numerous
12 subcortical regions. Correct?

03:42:29

13 **A.** I don't have the specific references that you're
14 pointing to, but, in general, there have been a number of
15 different brain regions, you know, that essentially refers
16 to most regions in the brain.

17 **Q.** Are you familiar with the journal *Brain*
18 *Communications*?

19 **A.** Yes, I am.

03:43:31

20 **Q.** Are you familiar with an article "Neuroimaging in
21 Parkinson's disease dementia: Connecting the dots"?

22 **A.** Yes, I am.

23 **Q.** Are you familiar with it because you're one of the
24 authors of the article?

03:43:43

25 **A.** I was a co-author on that study, yes.

KATHY MILLER, RMR, CRR - kathy@millers-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 Q. All right. I am showing you what is marked as
2 Defense Exhibit 52. Do you recognize the article?

3 A. Yes, I do.

4 Q. And zoom in. Yeah. I'm sorry. I am -- This is what
5 happens after we're in lockdown for a year. I forget the
6 ELMO tricks.

7 THE COURT: Everything is done with screen
8 sharing.

9 MR. LOONAM: That's right. I can Zoom with
10 anyone.

11 BY MR. LOONAM:

12 Q. So, in this article that you wrote, you wrote that
13 "Dementia is a common and debilitating aspect of
14 Parkinson's disease." Correct?

15 A. So, I was not the person that primarily wrote this,
16 but that is what that says, yes.

17 Q. So, when you're a co-author do you review the
18 material before it's published, or do you not review the
19 material before it is published?

20 A. I do review the material.

21 Q. And do you agree with the material in order to keep
22 your name on it or -- do you agree with the material, to
23 keep your name on it?

24 A. Yes. So, in general, I would review the material and
25 agree with the contributions that we made to that.

KATHY MILLER, RMR, CRR - kathy@miller-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 Q. Okay. So, at least as of the time that this article
2 was published, you believe that dementia was a common and
3 debilitating aspect of Parkinson's disease?

03:45:55

4 A. Yes. It says here that 50 percent of patients will
5 develop that within ten years of their initial diagnosis.

6 Q. That's right.

7 A. And that's citing a study Williams and Gray, et al.

8 Q. And some people can develop Parkinson's disease
9 young, correct?

03:46:06

10 A. Yes, some patients can develop it young.

11 Q. Yeah. And then the average age of the onset is about
12 65. Is that about right?

13 A. That sounds about right. I don't have an exact
14 estimate, but in the mid-60s to 70s I think would be
15 accurate.

03:46:19

16 Q. Yeah. And somebody who is diagnosed with -- And age
17 is -- is one of the highest risk factors for developing
18 dementia, correct?

19 A. Just across any type of dementia, yes, it increases
20 as we age.

03:46:34

21 Q. And, so, somebody who develops Parkinson's disease at
22 a -- an age that is above the mean age would be at a
23 likely even greater risk of developing dementia even
24 sooner. Correct?

03:46:50

25 A. Based on their age, they would be at a very high risk

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 of developing dementia.

2 **Q.** And then, to turn back to the original issue about
3 the heterogeneity of neuroimaging studies for Parkinson's
4 disease dementia, in this article, you wrote:

03:47:11

5 "Neuroimaging studies of Parkinson's" -- "PD" --
6 "Parkinson's disease dementia have been particularly
7 heterogenous with atrophy or hypometabolism reported in
8 frontal, temporal, parietal, occipital and insular
9 cortices as well as numerous subcortical regions."

03:47:36

10 So, at least as of the publication of this
11 article, you knew that those regions -- those various
12 regions of the brain had -- had been observed as impaired
13 because of Parkinson's disease dementia. Correct?

03:48:02

14 **A.** Yes. So, that's referring to different studies, not
15 different patients. I mean, in different studies they
16 have reported different areas involved in that, yes.

17 **Q.** Yeah. So, different groups of patients. Correct?

18 **A.** Correct.

03:48:19

19 **Q.** And then the study went on to say: "An assumption
20 underlying many conventional neuroimaging studies is that
21 abnormalities should be localized to specific brain
22 regions in order to explain specific symptoms."

03:48:41

23 So, as of 2019, when this article was
24 published, you agreed that conventional studies were
25 making this assumption about -- that abnormalities should

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 be localized to a specific brain region. Correct?

2 **A.** Yes. And is really reflective in a lot of the
3 research that I do.

03:48:55

4 **Q.** And this is -- this is with respect to the research
5 on mapping, as to the different regions and how they're
6 connected to networks. Correct?

03:49:10

7 **A.** Correct. So, for the example of memory, you may have
8 several different areas of the brain that are involved in
9 memory, and it's the cumulative damage to those areas that
10 would lead to the severity of the symptoms.

11 **Q.** And that's trying to explain the heterogeneity of how
12 you could have a disease that affects and manifests itself
13 in individuals so differently. Correct?

03:49:25

14 **A.** Well, this is really referring to the symptoms --
15 symptoms in those diseases.

16 **Q.** And the symptoms -- when you look at a scan, the two
17 scans could appear identical but affect individuals
18 completely differently. Correct?

03:49:46

19 **A.** So, it could involve different areas of the brain.
20 And, so, one patient may have damage to one area of the
21 brain, another patient may have damage to a different
22 area, and both of them lead to a memory problem, if that's
23 what you're asking.

03:49:58

24 **Q.** No. What I am saying is you could have two scans
25 that show the same level of impairment to the same part of

KATHY MILLER, RMR, CRR - kathy@millers-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 the brain, but it would manifest itself in those two
2 individuals clinically, potentially, in completely
3 different ways?

03:50:15

4 **A.** So, you are saying the same brain image -- or the
5 same amount of damage in two different people might
6 present with different symptoms?

7 **Q.** Correct.

03:50:25

8 **A.** Yes. That was something that we talked about with
9 the idea that the imaging is not a one-to-one
10 correspondence. So, there is the brain's -- that person's
11 ability to compensate for those problems that can affect
12 that translation.

13 **Q.** There is nuance to it?

14 **A.** There is, yes. It's not a one-to-one correspondence.

03:50:55

15 **Q.** Sorry. I want to -- we are going to turn back to
16 your report, so you could put that aside.

17 And here, after you described the typical
18 pattern seen in dementia with Lewy body, Parkinson's
19 disease or Alzheimer's disease, you wrote that --
20 Government's Exhibit 38. Let me see if I have a clean
21 copy of it.

03:51:44

22 MR. LOONAM: Do you have a clean copy of 38
23 there?

24 I'm sorry. I'm just going to put it up.

03:52:07

25 Sorry.

KATHY MILLER, RMR, CRR - kathy@millers-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 BY MR. LOONAM:

2 Q. You wrote: "Although the radiologist commented that
3 it remains possible, these could be early findings for one
4 of these disorders developing in the future."

03:52:20

5 Do you see that?

6 A. Yes.

7 Q. Okay. I am going to go back. I am going to put
8 Exhibit -- Defense Exhibit 39 on -- The impression here
9 was "Findings are very mild but suggestive of early
10 neurodegenerative disease, either Alzheimer's disease or
11 dementia with Lewy bodies, Parkinson's disease with
12 dementia."

03:52:41

13 So, the findings suggested present early
14 neurodegenerative disease, not as you report -- issued in
15 your report, that it remained possible that this could be
16 early findings of one of these disorders developing in the
17 future. Is that -- is that just a mistake?

03:53:00

18 A. Well, the radiology report said that they were early
19 findings suggestive of a neurodegenerative disorder, yes.

03:53:20

20 Q. No. It's not early findings. It said the findings
21 were mild.

22 A. Were very mild, suggesting early neurodegenerative
23 disease.

24 Q. Yeah. So, early -- so early Alzheimer's, early
25 dementia with Lewy bodies, early Parkinson's disease with

03:53:33

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 dementia. Right? So, suggestive of early
2 neurodegenerative disease, either Alzheimer's disease or
3 dementia with Lewy bodies.

03:53:47

4 So, early dementia with Lewy bodies, early
5 Alzheimer's, is different than early findings for one of
6 these disorders developing in the future. Do you agree?

03:54:08

7 **A.** So, I think that the findings of the PET scan in the
8 report are consistent with him being at a level of mild
9 cognitive impairment from these disorders, which was my
10 opinion.

03:54:26

11 **Q.** But you wrote it as -- although the radiologist
12 commented that it remains possible that these could be
13 early findings for one of these disorders developing in
14 the future, so you wrote it as the radiologist stating it,
15 didn't you?

16 **A.** Yes. So, this wasn't quoted and is different from
17 what they say in the radiology report.

18 **Q.** So, you don't think this is a mistake? You still
19 think that this is accurate and it was purposeful?

03:54:38

20 **A.** Well, I think it is different than what was in the
21 report. I think this is my interpretation. And, so,
22 attributing it to the radiologist -- that's not exactly
23 what they said.

03:54:51

24 **Q.** Okay. So, what you're saying is, when you said this,
25 although the radiologist commented that it remains

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 possible these could be early findings for one of these
2 disorders developing in the future, you didn't mean that
3 it was the radiologist's comment?

03:55:04

4 **A.** I think that's my interpretation of what their
5 comment meant in this case.

6 **Q.** You finished medical school in 2011?

7 **A.** Yes.

8 **Q.** You then moved on to your residency. Correct?

03:55:55

9 **A.** I did a year of an internal medicine internship and
10 then went on to my residency.

11 **Q.** Okay. And you finished your residency in 2015?

12 **A.** Yes.

03:56:05

13 **Q.** And then you had to do a fellowship? You didn't have
14 to do a fellowship. You earned a fellowship and you did a
15 fellowship from 2015 to 2017?

16 **A.** Yes.

17 **Q.** And, so, you finished your -- you finished your
18 fellowship, what, four years ago, and you finished your
19 residency about six years ago?

03:56:18

20 **A.** Yes, approximately.

21 **Q.** And then you went to work at Vanderbilt University.
22 Right?

23 **A.** Correct.

24 **Q.** And that was in 2017 you started work?

03:56:30

25 **A.** That was in 2017, yes.

KATHY MILLER, RMR, CRR - kathy@miller-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 Q. And at Vanderbilt you're both an academic professor
2 and a practicing doctor. Correct?

3 A. Yes. I see patients and I have appointment as an
4 assistant professor.

03:56:46

5 Q. Assistant professor. So, it's like assistant
6 professor, associate professor, full professor. Correct?

7 A. Yes. There is sometimes that -- a level instructor
8 as well.

03:57:04

9 Q. Below the -- below -- And you're assigned -- Well,
10 let me -- You're in the department of neurology?

11 A. Yes.

12 Q. And there are ten divisions there?

13 A. I don't know exactly how many divisions there are.

03:57:15

14 Q. Fair enough. It is amazing what you can learn on the
15 web. Sorry.

16 But are you assigned to the Behavioral and
17 Cognitive Neurology Division?

18 A. Yes.

19 Q. And who is Daniel Claassen?

03:57:27

20 A. Daniel Claassen is another one of the behavioral and
21 cognitive neurologists in the group.

22 Q. And is he responsible for the group? Is he your
23 boss?

24 A. So, he's the division chief.

03:57:38

25 Q. He is like your boss's boss?

KATHY MILLER, RMR, CRR - kathy@millers-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

03:57:53

1 **A.** Well, I don't think of it as bosses, but, yes, he
2 would be the head of our division, and then there is a
3 chairman of the department, and then there's a head of the
4 hospital, and I am sure there are people in between those
5 positions.

6 **Q.** And this is not meant with any disrespect, but some
7 things only come with time, but are you one of the more
8 junior M.D.s in your division?

03:58:10

9 **A.** Yes. So, I think that in our division I would be one
10 of the more earlier people. Younger people, I should say.

11 **Q.** And you -- within the division there are numerous
12 clinics and centers in the Department of Neurology.
13 Correct?

14 **A.** Yes.

03:58:25

15 **Q.** And you're the Director of the frontotemporal
16 dementia clinic. Right?

17 **A.** Correct.

18 **Q.** And thank you for putting up with all my
19 mispronunciations this afternoon, so I appreciate it.

03:58:37

20 What is the frontotemporal dementia
21 clinic?

03:58:53

22 **A.** So, I evaluate patients with concerns for a different
23 type of frontotemporal dementias. This is a group of
24 different dementias where patients can present with
25 behavioral problems, problems in their social behavior.

KATHY MILLER, RMR, CRR - kathy@miller-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

03:59:11

1 They can also present with language problems. They can
2 present with motor problems that may overlap with some of
3 the symptoms of Parkinson's, so things like PSP and
4 corticobasal degeneration. And then they may also have
5 atypical forms of other diseases like Alzheimer's, or it
6 may spill into actual cases where it just seems like more
7 typical dementias.

03:59:25

8 **Q.** But frontotemporal dementia is definitely distinct
9 from Alzheimer's. Correct?

10 **A.** In terms of the biology, yes. So, there are
11 different pathologies that are involved in frontotemporal
12 dementia compared with Alzheimer's.

03:59:42

13 **Q.** Yeah. I mean, if you look at some of the scans that
14 we've looked at today, they note -- they, like, rule out
15 frontotemporal dementia in one of the scans. Right?

16 **A.** Yes. They commented that they do not feel the
17 patterns are consistent.

18 **Q.** Yeah. It looks like it's Alzheimer's or Parkinson's
19 disease dementia but not frontotemporal?

03:59:52

20 **A.** That is in the reports, yes.

21 **Q.** And do you see patients -- by the way -- Scratch
22 that.

04:00:06

23 We covered Alzheimer's, but frontotemporal
24 dementia is also distinct from Parkinson's disease
25 dementia. Correct?

KATHY MILLER, RMR, CRR - kathy@miller-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 **A.** Yes, they are different diseases.

2 **Q.** And do you see patients through the frontotemporal
3 dementia clinic?

4 **A.** Do I evaluate? Yes, I see patients as part of that.

04:00:18

5 **Q.** Yeah. Yeah. It's like that's -- your clinical
6 practice is there. Correct?

7 **A.** It is one of the clinics that I have.

8 **Q.** And what other clinics do you have?

04:00:29

9 **A.** I have general cognitive and behavioral neurology
10 clinics.

11 **Q.** And Mr. Brockman doesn't have frontotemporal
12 dementia, in your opinion. Correct?

13 **A.** No, he does not.

14 **Q.** Vanderbilt has a Parkinson's disease center. Right?

04:00:41

15 **A.** They do have a Parkinson's disease center.

16 **Q.** And are you assigned to the Parkinson's disease
17 center?

18 **A.** No, I am not directly involved in the Parkinson's
19 disease center, although I do have research projects in
20 patients with Parkinson's disease.

04:00:55

21 **Q.** Okay.

22 **A.** I evaluate them -- patients with Parkinson's disease
23 as part of that.

04:01:03

24 **Q.** All right. In fact, did I use one of your papers
25 just now on Parkinson's disease dementia?

KATHY MILLER, RMR, CRR - kathy@miller-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 **A.** Yes.

2 **Q.** And there is -- there is the Memory and Alzheimer's
3 Center, and you have academic responsibilities there?

04:01:26

4 **A.** So, I am one of the faculty affiliate members of the
5 Memory and Alzheimer's Center. So, that's really the
6 research group that is involved in it. So, it's a group
7 of neuropsychologists that are tasked with helping to form
8 a specialized research center in Alzheimer's called an
9 Alzheimer's Disease Research Center.

04:01:41

10 **Q.** Yeah. So, it's the research side but not the
11 clinical side of it. Correct?

12 **A.** Correct.

04:01:52

13 **Q.** And, so, if Mr. Brockman was -- walked in with his
14 current diagnoses, to Vanderbilt, you wouldn't be his
15 doctor. Right?

16 **A.** Well, I could be. I could evaluate someone for
17 memory concerns. I could evaluate someone for concerns
18 about dementia with Lewy body, or these different
19 disorders. I have a number of patients with Lewy body
20 disease. Probably the majority of my patients, even
21 though I specialize in frontotemporal dementia, have
22 Alzheimer's disease.

04:02:06

23 **Q.** So, you specialize in frontotemporal. Is it
24 coexisting Alzheimer's, then?

04:02:19

25 **A.** There are some cases where it can be coexisting, but,

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

04:02:35

1 in general, in the patient who has the right clinical
2 features, we think that we can diagnose that and separate
3 that. But it is the case that we may have a patient where
4 we think they have frontotemporal dementia, and they would
5 have a positive amyloid PET scan or amyloid on their
6 spinal fluid.

04:02:50

7 **Q.** So, serendipity, if there was a belief that somebody
8 had frontotemporal that was directed to you or referred to
9 you, it turns out that they have amyloid plaque and
10 tangles, they stay with you because you have already sort
11 of worked them up. Is that how it works?

12 **A.** There they would. And it's possible that someone
13 would be referred for memory loss to begin with, and I
14 would see them as part of my other clinic.

04:03:02

15 **Q.** For just memory loss, but somebody with a diagnosis
16 of Parkinson's and Alzheimer's would likely go to the
17 Parkinson's clinic or the Alzheimer's clinic for
18 treatment?

04:03:13

19 **A.** No. So, I mean, I would be one of the primary people
20 seeing them for Alzheimer's dementia.

21 **Q.** Okay. How many patients are you treating at present?

22 **A.** I don't have a good estimate. At least 500, maybe
23 more than that.

04:04:02

24 **Q.** Now, going back to the March scan, March 12th, 2021,
25 scan, Defense Exhibit 39.

KATHY MILLER, RMR, CRR - kathy@millers-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 The government hired its own
2 neuroradiologist in this case. Correct?

3 **A.** Yes.

4 **Q.** And that's Dr. Ponisio?

04:04:23 5 **A.** Dr. Ponisio, yes.

6 **Q.** And Dr. Ponisio reviewed the March PET scan and
7 issued a report in September, three months after your
8 original report. Right?

9 **A.** Yes. She evaluated the scans, issued a report, and
04:04:39 10 she also performed the quantitative PET measurements that
11 we looked at. Those provided kind of a more quantitative
12 measure of the areas of the brain that were involved.

13 **Q.** Yeah. And those are sort of the computer tools.
14 When you put it up, it gives you some quantitative data
04:04:56 15 that -- like a -- like the Neuroreader product that spits
16 out on the MRI?

17 **A.** So, it's a similar idea to that where it is comparing
18 it to other persons who don't have neurological disorders
19 to get a more quantitative estimate of the areas of the
04:05:15 20 brain that are affected.

21 **Q.** Okay. I'll show Government's Exhibit 6, which is
22 Dr. Ponisio's report.

23 And Dr. Ponisio's interpretation of the
24 scan differed slightly from the radiologist at Houston
04:05:40 25 Methodist. Correct?

KATHY MILLER, RMR, CRR - kathy@miller-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 **A.** Yes, I think it did.

2 **Q.** Yeah. And Dr. Ponisio found that "The visual
3 qualitative analysis demonstrates abnormal moderate to
4 markedly decreased metabolic activity in the" -- what is
5 that? I am not going to pronounce it.

04:06:00

6 **A.** The cingulate gyrus and bilateral precuneus.

7 **Q.** Thank you. So, those are additional areas of the
8 brain where Dr. Ponisio sees moderate to markedly
9 decreased metabolic activity. Correct?

04:06:20

10 **A.** Yes. And those really came out in the quantitative
11 analysis where you could see those areas.

12 **Q.** But, for now, with respect to her findings here, this
13 is the visual qualitative analysis that she is describing?

14 **A.** She does comment on that in the qualitative analysis,
15 yes.

04:06:34

16 **Q.** Yes. And, in addition, she also confirms the mild
17 hypometabolism -- or she finds mild hypometabolism in the
18 right frontoparietal lobes. Correct?

19 **A.** Yes. That's what she states here.

04:06:50

20 **Q.** And marked decreased FDG avidity in the bilateral
21 caudate nucleus. What's the FDG avidity? Is that the
22 actual -- the tracer?

23 **A.** Yes. So, that's just another way of saying that
24 there was less binding, less activity, in that area.

04:07:05

25 **Q.** Okay. So, fair to say in interpreting the March

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 scan, Dr. Ponisio observed additional abnormalities when
2 you compare it to the reading from Houston Methodist?

3 **A.** Yes. She comments on more areas of abnormalities.

4 **Q.** More areas. And it is also a different degree of
5 abnormality that she observes. Correct?

6 **A.** Well, I think there is a difference between the
7 degree of abnormality in that region versus whether that's
8 considered to be a mild finding overall --

9 **Q.** Okay.

10 **A.** -- or an early finding overall.

11 **Q.** Okay. So, you could have a markedly decreased
12 metabolic activity and still have a mild finding?

13 **A.** You could have a markedly decreased metabolic
14 activity in a single area but have a mild finding overall
15 if that doesn't extend into other areas.

16 **Q.** In this answer --

17 **A.** So, the question is usually --

18 **Q.** No. I apologize. You complete your answer.

19 **A.** No. The question is usually looking at the scan as a
20 whole rather than as individualized.

21 **Q.** And in this instance it does go into other areas.
22 She notes issues with multiple areas, multiple regions of
23 the brain. Correct?

24 **A.** She does comment on several areas in the report.

25 **Q.** And then Dr. Ponisio conducted this quantitative

KATHY MILLER, RMR, CRR - kathy@miller-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

04:08:57

1 analysis that, as I understand it from you, takes the
2 image and then compares the image against a control set
3 and then determines if there is a statistically
4 different -- a statistically significant difference in
5 what is seen from the control set. Correct?

6 **A.** Yes. And it gives you a Z-score which essentially
7 corresponds to the number of standard deviations different
8 from that population.

04:09:09

9 **Q.** And this comes up in the context of the MRI.
10 Standard deviation is a very important concept when you're
11 comparing an individual against a group; is that correct?

12 **A.** Yes.

13 **Q.** Okay. Why?

04:09:24

14 **A.** Well, it tells you how far off of that group that
15 patient is. So, it tells you to what degree they are
16 different than that population they're comparing them to.

17 **Q.** Providing the standard deviation is standard in
18 scientific work?

04:09:43

19 **A.** Yes. It's not always a Z-score. And often it's used
20 for later statistical analysis that may end up at a -- you
21 know, a statistical significance in a different way. But,
22 yes, we would in almost all those situations look at
23 something like a standard deviation to see is this group
24 different than the group we're comparing it to?

04:09:59

25 **Q.** Yeah. And that's groups. Is it -- it's even more

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 important, if you're comparing an individual -- a single
2 individual to a group of individuals, to be -- for that
3 comparison to be valid, you would need to know the
4 standard deviation. Correct?

04:10:18

5 **A.** You would want to. Yes.

6 **Q.** And why would you want to?

7 **A.** And, so, that tells -- I mean, that tells you how
8 different they are from that population average.

04:10:30

9 **Q.** I mean, if you -- to be scientifically valid you
10 would need -- and to vet the -- the -- the scientific
11 value of the data, you would need to know the standard
12 deviation. Correct?

13 **A.** Well, you really wouldn't do an individual versus a
14 group as a scientific study.

04:10:43

15 **Q.** So, if you're comparing an individual against a
16 group, that's not really a scientific study?

17 **A.** So, it -- I mean, typically, you are looking at group
18 studies that are reported in the literature.

04:10:55

19 MR. LOONAM: I hear banging on the -- on the
20 benches, Your Honor. I don't know what that was. But I
21 heard banging on the benches, and I don't know if that's a
22 signal from somebody in the audience.

23 UNIDENTIFIED SPEAKER: I was shifting my weight
24 and the bench moved.

04:11:09

25 MR. LOONAM: Are you a witness in this case,

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 sir?

2 UNIDENTIFIED SPEAKER: No.

3 THE COURT: I don't --

4 MR. LOONAM: There is nothing to do, Your

04:11:17

5 Honor. I heard -- we were giving an answer and I heard

6 banging all of a sudden on the bench, and since we have

7 witnesses in the courtroom, I just wanted to make sure that

8 there was no signaling going on.

9 THE COURT: I don't think that there was based

04:11:27

10 on his answer, but if you think that there is some

11 signaling going on, let me know.

12 MR. LOONAM: Let me be clear. Nothing to

13 impugn the witness. That's absolutely not --

14 THE COURT: Okay.

04:11:40

15 MR. LOONAM: That is not what I intended.

16 THE COURT: Okay. I just want to make sure. I

17 mean, if you have a concern, let me know.

18 MR. LOONAM: No. No. No.

19 THE COURT: I didn't hear it, actually.

04:11:49

20 MR. LOONAM: Yeah.

21 BY MR. LOONAM:

22 Q. Okay. So, you were saying for a scientifically valid

23 exercise, you wouldn't really compare an individual

24 against a group?

04:12:00

25 A. So, this is being done -- Clinically, you would

KATHY MILLER, RMR, CRR - kathy@millers-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 compare the group -- I guess I am not really understanding
2 your question.

04:12:14

3 **Q.** Well, you had -- I had asked you if you would want to
4 know the standard deviation, if you were comparing an
5 individual against a group, like we're doing in the
6 Neuroreader exercises or in the MRI exercises, where you
7 have an individual scan for an individual brain and you
8 were comparing that against a group. Correct?

9 **A.** Correct.

04:12:28

10 **Q.** And I said, when you do that exercise, when you
11 compare an individual against a group, you -- you -- to do
12 a valid comparison as a scientist, as a doctor, you need
13 to know the standard deviation. Correct?

04:12:46

14 **A.** Yes. The standard deviations correspond to, you
15 know, the percentiles of where that patient would fall.

16 **Q.** Is two standard deviations typically captured on 95
17 percent of the group population?

18 **A.** Yes. So, that would be about two and a half percent
19 on either side.

04:12:59

20 **Q.** Yeah. So, if you're -- if -- to be statistically
21 significant, if you are -- have two standard deviations,
22 statistical significance means you're on sort of -- if
23 there is a bell curve, you are on two-and-a-half percent
24 on either side of the bell curve. Correct?

04:13:16

25 **A.** So, that's what this is referring to, yes.

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

04:13:41

1 Q. And, so, here, after running the -- the quantitative
2 analysis, Dr. Ponisio determined that there was a
3 statistically significant decreased tracer accumulation in
4 Mr. Brockman's caudate nuclei, interior cingulate,
5 posterior cingulate and precuneus. Correct?

6 A. Yes. That's what it states here. And those were the
7 images we were looking at earlier.

04:13:57

8 Q. The images we were looking at earlier, but -- Okay.

9 And according to Dr. Ponisio this
10 described pattern of hypometabolism can represent early
11 Alzheimer's dementia in the correct clinical setting?

12 A. Yes. That's what he says.

04:14:24

13 Q. And, you know, here, you were asked questions about
14 Dr. Ponisio's use of early Alzheimer's dementia on direct.
15 Do you recall that?

16 A. Yes. I remember I was asked about that.

17 Q. And do you have any reason to doubt Dr. Ponisio's
18 competence?

19 A. No. No.

04:14:44

20 Q. Do you have any reason to doubt that Dr. Ponisio
21 intended to indicate early Alzheimer's dementia on this --
22 on this paper?

23 A. I don't know what she intended, but that's definitely
24 what it says.

04:15:05

25 Q. Yeah. Thank you.

KATHY MILLER, RMR, CRR - kathy@miller-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 So, you -- we talked about the amyloid PET
2 scan. You talked -- you discussed it in direct. Correct?

3 **A.** Yes.

4 **Q.** And Mr. Brockman underwent the amyloid study on -- on
5 July 28th, 2021. Correct?

6 **A.** It was in July. I don't remember the exact date.

7 **Q.** Fair enough.

8 **A.** But I think that sounds right.

9 **Q.** And your memory has been good, so -- And you didn't
10 request this scan, right?

11 **A.** No, I did not.

12 **Q.** And on direct there were questions suggesting that
13 there may not be much value in obtaining the amyloid scan.
14 Do you remember that?

15 **A.** I don't remember that question exactly.

16 **Q.** Okay. So, you think there is -- there is value in
17 obtaining the amyloid scan. Correct?

18 **A.** Well, I think the amyloid scan tells you whether
19 someone has amyloid. And, so, that would, again,
20 correspond to the likelihood that cognitive symptoms would
21 be related to Alzheimer's disease, but it wouldn't be
22 useful in telling you the degree of expected cognitive
23 impairment.

24 **Q.** Well, it's a gating issue, but once you have -- Well,
25 first of all, you don't know when Mr. Brockman started

KATHY MILLER, RMR, CRR - kathy@millers-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 accumulating the beta amyloids in his brain. Correct?

2 **A.** No, we don't.

3 **Q.** It could have been --

4 **A.** At one time point from July.

04:17:04 5 **Q.** Yeah. It could have been a decade before. Correct?

6 **A.** Yes, it could have been.

7 **Q.** And -- but, in this case, the results of the -- the
8 PET amyloid had a -- an impact. Correct?

9 **A.** It has an impact on the possible diagnoses that he
04:17:30 10 may have leading to cognitive impairment. It does not
11 have an impact on the amount of brain damage that were on
12 the other scans. So, it doesn't really change the
13 interpretation of those.

14 **Q.** Because that -- you have -- actually, that goes to
04:17:44 15 the tangles, right? You call it the Tau tangles?

16 **A.** Well, the Tau tangles happen next, and then there are
17 the changes that happen on the FDG PETs and the MRI scan.

18 **Q.** Well, the changes that occur on the -- on the FDG
19 PET -- Is there a correlation between the Tau tangles
04:18:06 20 interfering with the activity of the neurons that is
21 causing the hypometabolism?

22 **A.** So -- Yes. So, the changes on the MRI scan and the
23 FDG PET correspond more closely to the Tau and can
24 correspond to that accumulation.

04:18:22 25 **Q.** So, you were asked questions on direct about, you

KATHY MILLER, RMR, CRR - kathy@millers-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 know, there was no Tau scan in this case. Do you remember
2 that question?

3 **A.** Yes.

04:18:33

4 **Q.** All right. And you said that there was no Tau in
5 this case, which there wasn't. You could have ordered a
6 Tau scan. Right?

7 **A.** Yes. I could have ordered or recommended a number of
8 different tests.

04:18:47

9 **Q.** You recommended a bunch of tests -- EEG, a couple
10 FDGs. Mr. Brockman went through all of it. Correct?

11 **A.** Yes.

12 **Q.** And, so, had you wanted a Tau test, you would have
13 had it. You have every reason to believe that you would
14 have gotten the results. Correct?

04:18:58

15 **A.** Well, I don't know if I would have gotten the
16 results, but, if I had recommended it, it would have been
17 communicated, yes.

18 **Q.** All right. Well, if past is prologue, I guess.

04:19:13

19 And, so -- but the Tau test, in light of
20 the FDG PET and the hypometabolism, is unnecessary in this
21 context. In the research context, it may be different;
22 but in this context, it's unnecessary. Correct?

04:19:33

23 **A.** Yes. I think the -- you know, the more important
24 imaging is the MRI and the FDG PET because that is what is
25 going to correspond most closely to the clinical symptoms.

KATHY MILLER, RMR, CRR - kathy@millers-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 And whether that is due to Alzheimer's disease,
2 Parkinson's disease or a combination -- for the current
3 determination, I don't think that that is useful or
4 is necessary to make that determination.

04:19:49

5 **Q.** Okay. And in addition to -- Let me pull it out here.
6 Back from the 28th. Government's Exhibit 7. That's not
7 the PET. That's Ponisio. Sorry.

04:20:56

8 So, this is Government's Exhibit --
9 Defense Exhibit DX-42. So, we talked about the impression
10 is positive study indicating moderate to frequent amyloid
11 neuritic plaques. In the findings it indicates: "There
12 is diffuse loss of the gray-white matter distinction, most
13 pronounced in the frontal and temporal lobes."

04:21:15

14 So, is -- that finding, that's the
15 consistent observation for a positive amyloid plaque
16 study?

17 **A.** Yes. So, this indicates a positive amyloid plaque
18 study.

04:21:47

19 **Q.** Dr. Ponisio reviewed this study and issued a report.
20 Did you review that report?

21 **A.** Yes.

04:22:00

22 **Q.** Dr. Ponisio found an abnormal decreased cortical
23 white matter contrast throughout Mr. Brockman's cerebrum.
24 Is that another way of saying, sort of, the results for a
25 positive PET amyloid?

KATHY MILLER, RMR, CRR - kathy@millers-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 **A.** Yes. She essentially agreed it was a positive
2 amyloid PET study.

3 **Q.** Yes. All right. So, there was an August 24th, 2021,
4 FDG PET scan?

04:22:15

5 **A.** Yes, there was.

6 **Q.** And you -- you ordered that PET scan? There is
7 somebody else's name on the scan, right, but you ordered
8 that scan?

9 **A.** It was my suggestion, yes.

04:22:23

10 **Q.** Yes. And you have read the report from the August
11 24th scan?

12 **A.** Yes.

13 **Q.** And, again, this is Defense Exhibit 45, the same
14 Mr. Fisher. And this study found, you know, again, the
15 findings are mild. Let me see here. "The findings are
16 mild but very suggestive of a neurodegenerative disease,
17 particularly Alzheimer's disease, although statistically
18 less likely. Dementia with Lewy bodies or Parkinson's
19 disease with dementia can have a similar scan pattern.

04:22:59

20 The markedly abnormal uptake on the prior amyloid PET scan
21 also somewhat favors Alzheimer's disease over dementia
22 with Lewy bodies or Parkinson's disease dementia."

04:23:21

23 And you agree with that finding?

24 **A.** Yes. I largely agree with this interpretation.

04:23:45

25 **Q.** And the -- this scan -- Well, let me ask this. As a

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 doctor and in dealing with so many patients, you have
2 to -- you order scans for your patients, right?

3 **A.** Yes.

04:24:04

4 **Q.** And you have to deal with insurance companies and
5 paying for scans. Correct?

6 **A.** In some instances. Sometimes insurance companies
7 will cover it. Other times we may have to discuss that
8 with them.

04:24:16

9 **Q.** As a typical practice, are you aware of whether or
10 not an insurance company will cover two FDG PETs of a
11 brain in a single year?

12 **A.** I am not aware.

04:24:30

13 **Q.** But you haven't heard that they typically will not
14 cover two FDG PETs in a single year because they do not
15 expect to see changes in that amount of time?

16 **A.** I typically wait for a year to have more sensitivity,
17 but I don't recall ever being told that I couldn't order a
18 test before that.

04:24:43

19 **Q.** But you, yourself, in your clinical practice would
20 typically wait at least a year before ordering another FDG
21 PET. Correct?

04:24:56

22 **A.** Yes. So, if I was trying to estimate the normal
23 progression of one of these disorders, you know, again, I
24 would not expect there to be significant changes in the
25 PET scan, you know, according to that normal disease

KATHY MILLER, RMR, CRR - kathy@millers-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 course.

2 **Q.** And in Mr. Brockman's case there was progression --
3 observable progression in his hypometabolism from March to
4 August. Correct?

04:25:16

5 **A.** Yes. So, that's the amount of progression that I
6 would expect based on a normal disease course.

7 **Q.** What you are saying here is that that's the normal
8 amount of progression you would expect?

04:25:28

9 **A.** Yes. Comparing the two scans -- the one from March,
10 the one from August -- looking at those images on a
11 quantitative analysis, that's what I would expect.

12 **Q.** Okay. So, over a five-month period?

13 **A.** Over a five-month period.

04:26:01

14 **Q.** Do you have a neuroradiologist that you use as part
15 of your clinical practice?

16 **A.** There is not a specific neuroradiologist.

17 **Q.** Is there a team of neuroradiologists?

18 **A.** I believe it's a department in the hospital.

04:26:09

19 **Q.** And they send you the reports after -- after reading
20 the PETs?

21 **A.** Yes. Typically, the orders will be made and then
22 there is a report generated from the PET.

23 **Q.** The MRI -- just generally, the MRI is -- is a -- I
24 think you used "less sensitive instrument" than FDG PET.

04:26:36

25 Correct?

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 **A.** Yes.

2 **Q.** And -- but, before, I think you had testified that,
3 you know, MRI was kind of a lagging indicator, that you
4 would see changes on the FDG PET first and then you would
5 see it on the MRI? Do I understand that correctly?

04:26:48

6 **A.** Well, I think that you could see them at the same
7 time, but, in general, I would -- would think that the PET
8 scan is more likely to detect an abnormality that's
9 reported than the MRI scan.

04:27:04

10 **Q.** But to be clear -- and I think we already covered
11 this -- you could see hypometabolism and abnormality on
12 the FDG PET that does not result in atrophy. Correct?

13 **A.** Yes. You could see hypometabolism on the PET that
14 would not be corresponding to atrophy on the brain MRIs.

04:27:26

15 **Q.** So, rather than the neurons dying, they are just
16 being disrupted in some way where they are not -- they are
17 acting abnormally. Correct?

18 **A.** Well, that's one reason. They also could be dying
19 but to a small enough degree that that is not detectable
20 on the MRI.

04:27:41

21 **Q.** So, in addition, there could be offsetting
22 inflammation of the brain. Correct?

23 **A.** I'm not sure I quite follow you.

24 **Q.** Well, like -- neurons can be dying, but they can be
25 offsetting inflammation in the brain so that the

04:28:00

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 volumetric analysis that the MRI's conducting does not
2 detect volumetric change?

3 **A.** So -- I mean, I am not sure exactly what you're
4 referring to.

04:28:13

5 Typically, when we think of acute
6 inflammation -- so things like multiple sclerosis,
7 infection -- that can cause swelling in the brain, in
8 neurodegenerative disorders there is some hypothesis that
9 there could be an inflammatory component, but it is not

04:28:29

10 that acute inflammation that we see in those other
11 disorders.

12 **Q.** Yeah. So, you can't compare it to multiple
13 sclerosis, then?

14 **A.** Correct.

04:28:38

15 **Q.** Okay.

16 THE COURT: And, counsel, just for planning
17 purposes, I plan on going to about 5:30.

18 MR. LOONAM: Yes, Your Honor.

19 THE COURT: We have got plenty of time.

04:28:51

20 MR. LOONAM: That's great. I am wrapping -- I
21 am seeing what I need to cover. And I am going to get to,
22 I think, the findings point that I previewed at the very
23 beginning.

24 THE COURT: Okay.

04:29:02

25 MR. LOONAM: But we will try and -- I think my

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 suggestion will be to use a scalpel.

2 THE COURT: Well, I just wanted to tell you you
3 have got another hour, so don't worry.

4 MR. LOONAM: Thank you, sir. It's a dangerous
04:29:14 5 thing to tell a lawyer.

6 (Laughter.)

7 BY MR. LOONAM:

8 Q. You know, you have, you know, your clinical practice.
9 Do you think having a clinical practice is important to be
04:29:31 10 able to conduct an evaluation of a patient like
11 Mr. Brockman?

12 A. Do I think that seeing patients clinically is helpful
13 for giving a forensic evaluation?

14 Q. Yes.

04:29:44 15 A. Yes.

16 Q. One moment. Can we go to your supplemental report?
17 Do you have that in front of you? No, you probably don't
18 have that.

19 A. No, I don't.

04:30:33 20 MR. LOONAM: It's the government version.

21 MR. MAGNANI: Yeah, we have it, I think.

22 THE WITNESS: Thank you.

23 MR. LOONAM: Sure. Let me find my spot. I'm
24 sorry. One moment, Your Honor.

04:32:02 25 THE COURT: Oh, sure. Take your time.

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 MR. LOONAM: Yeah. I apologize.

2 BY MR. LOONAM:

3 Q. Page 9 of Government's Exhibit 39. Okay. I am going
4 to focus on the paragraph beginning "Given his age..."

04:32:56

5 Are you there?

6 A. (No response.)

7 Q. Are you there?

8 A. Oh, I'm sorry. Page 9?

9 Q. Page 9.

04:33:06

10 A. Yes.

11 Q. The paragraph that begins "Given his age..."

12 A. "Given his age..." Yes.

13 Q. Okay. So, "Given his age, recent hospitalizations
14 for delirium, the expected disease progression, and

04:33:19

15 neuroimaging results, it is possible that Mr. Brockman is
16 now in the dementia stage. However, it is unlikely that
17 Mr. Brockman would be at the severe or end-stage dementia
18 as his most recent evaluations would suggest."

19 That sentence, in and of itself, does not
20 rule out moderate dementia, does it?

04:33:38

21 A. That sentence does not comment on moderate dementia.

22 Q. That's right.

23 You talk about the -- in this paragraph,
24 you talk about the possibility that Mr. Brockman is now in
25 the dementia stage, but you -- you go beyond that

04:33:56

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 possibility and you opine, in the bolded paragraph
2 beginning in the second line -- the second sentence: "It
3 is reasonable, given his hospitalizations for delirium,
4 natural disease course, and neuroimaging, that
5 Mr. Brockman has progressed to the dementia stage, but it
6 is unlikely that he would be at the severe or end stage of
7 dementia as indicated by his recent assessments."

8 There is nothing in that sentence that
9 rules out moderate dementia. Correct?

10 **A.** It does not comment on moderate dementia.

11 **Q.** Yeah. Your report finds it unlikely that
12 Mr. Brockman is at severe or end-stage dementia, but, you
13 know, can you direct me where in your report that you rule
14 out that Mr. Brockman has progressed to moderate dementia?

15 **A.** In this section, I don't see that I use the word
16 "moderate."

17 **Q.** No. The whole report. Anywhere in the supplemental
18 report, sir? Take your time.

19 **A.** I am -- again, I am not aware of using that word. I
20 could look through the report, but I don't recall using
21 "moderate dementia."

22 **Q.** Yeah. So -- so, what you -- in your report that was
23 provided to defense, you -- you ruled out severe dementia
24 and end-stage dementia, which is like at death's door.

25 Correct? You talk about the -- the reasonableness or the

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 plausibility of early dementia, but you're silent with
2 respect to moderate dementia. You certainly don't rule it
3 out. Correct?

04:35:59

4 **A.** I don't use the word "moderate" dementia in this
5 report. And this is referring, really, to the natural
6 disease progression from MCI to the mild dementia stage.

04:36:19

7 MR. LOONAM: Your Honor, I mean, so the witness
8 has opined today on direct in a way not disclosed in his
9 report. We have now confirmed it. I don't know what the
10 government had in mind when it said it could point to
11 the -- the line where Dr. Darby ruled out moderate
12 dementia, but moderate dementia was not ruled out in this
13 record as disclosed to the defense.

14 THE COURT: Okay. Response?

04:36:37

15 MR. MAGNANI: I think the -- and I don't have
16 the report in front of me, but my understanding is the
17 witness's opinion is that the defendant has MCI, or mild
18 cognitive impairment, up to the potential of possible early
19 dementia. I don't think the absence of him saying in his
20 report he does not have moderate dementia -- In other
21 words, the rest follows. If the witness's report says he
22 has MCI up to mild dementia, that necessarily means he does
23 not have beyond mild dementia.

04:36:54

24 So, this is just another word game that
25 defense counsel has been playing with this witness for

04:37:08

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 hours.

2 MR. LOONAM: Judge, this is not a word game.

3 THE COURT: Let me just ask the witness.

4 MR. LOONAM: Yes.

04:37:18

5 THE COURT: Have you ever reached that opinion
6 before?

7 THE WITNESS: Which specific opinion?

8 THE COURT: The opinion with respect to you
9 can't rule out mild --

04:37:32

10 THE WITNESS: Dementia.

11 THE COURT: -- dementia.

12 THE WITNESS: Yeah. So, this is really based
13 on that progression. So, we know, you know, as a rough
14 estimate, 15 percent of patients with MCI may progress to
15 the mild dementia stage. That may be increased with the
16 presence of a delirium episode. So, without what I felt
17 was accurate information regarding the actual level of
18 functional impairment he had, what we had to go on was the
19 expected disease course, and so I think there is that
20 percentage there that you could see that would progress.

04:38:02

21 So, I just don't know, based on the
22 information, what his exact level of impairment would be.

23 THE COURT: But don't you want -- I mean,
24 that's what I'm trying to figure out.

04:38:15

25 MR. LOONAM: That's a different answer than

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 what he gave on direct, Your Honor, and we can read the
2 exact quotes here, which are different than what the
3 government just said. The witness said -- and it's not
4 only in one spot. It's repeated here, and I'll go to the
5 ending.

04:38:28

6 'It is unlikely that he would be at the
7 severe or end stage of dementia. It's reasonable that he's
8 progressed to mild dementia' and is just silent with
9 respect to moderate dementia.

04:38:42

10 The witness has now said, 'I don't know.'
11 That is not what he said on direct.

12 And if we go through the report, in
13 multiple places you'll see that what the witness said was
14 in the report. And, look, I don't want to make too much of
15 this because -- but in this report he -- he says this.

04:38:59

16 Let's go through the conclusions.

17 THE COURT: Okay. Well, let me just stop you
18 there.

19 Okay. Let's say he is not allowed to
20 provide that testimony. Where does that get you? So,
21 let's say that I prevent him from saying that he can't rule
22 out mild to severe dementia. Where does that get you?

04:39:10

23 MR. LOONAM: I want to strike that he rules out
24 the possibility of moderate dementia.

04:39:26

25 THE COURT: Okay. And how does that help you?

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

04:39:39

1 MR. LOONAM: Because it leaves open the
2 possibility, especially given his last statement -- His
3 last statement was 'Because of the natural progression,
4 because of his' -- 'I can't' -- 'I can't tell where he is,
5 which is' -- 'other than severe or end stage.'

04:39:52

6 He is very clear. 'I look at the scans.
7 I look at where he is on this. It is clear to me that it
8 is not end-stage or severe dementia.' That opinion is
9 clear and it was disclosed to us.

04:40:07

10 He thinks it's reasonable that it's
11 progressed to -- to mild dementia, but it leaves open the
12 possibility that it could be moderate dementia.

04:40:19

13 THE COURT: And, so, how does that -- I am
14 still trying -- I just want to make sure I understand this.

15 So, you strike that. How does that help
16 you? So, you strike the fact that --

17 MR. LOONAM: This witness has not ruled out the
18 possibility that Mr. Brockman is suffering from moderate
19 dementia.

20 THE COURT: Maybe I am missing something.

21 Isn't that what you're saying? You don't
22 know based on the information you have?

23 THE WITNESS: I think there is that
24 uncertainty.

04:40:29

25 So, what I would expect from a patient who

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

04:40:45

1 is at the mild cognitive impairment stage in May of 2021 is
2 that could be progression to the stage of mild dementia. I
3 don't think it is likely it would progress beyond that
4 based on the natural course of the disease. I don't think
5 it would progress beyond the mild dementia stage.

04:40:58

6 THE COURT: Okay. I want to take a look at the
7 previous testimony. I'll be right back. Just pull it up.
8 Give me maybe about five minutes, counsel.

9 MR. LOONAM: Thank you, Your Honor.

10 (Proceedings recessed from 4:40 to 4:45.)

11 THE COURT: Please be seated, everyone.

12 Okay. I reviewed the transcript and I
13 also reviewed the expert report. Respectfully, objection
14 overruled.

04:45:51

15 He testified that it is up to mild and
16 definitely not severe, but he can't say one way or the
17 other whether it's moderate. That testimony is consistent
18 with his testimony on the stand today, and it's consistent
19 with his expert report.

04:46:05

20 Respectfully, disagree.

21 MR. LOONAM: Your Honor, I just want to make
22 sure we're clear on the record. Going back to his
23 direct -- Okay.

04:46:16

24 THE COURT: I am going back to -- I am looking
25 at his direct testimony. I am also looking at the expert

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 report. I am also looking at his testimony on
2 cross-examination.

3 And I understand that you guys don't agree
4 with this, but to me it's very clear. The witness is
04:46:29 5 saying it's up to mild. It's definitely not severe. And
6 the only implication is, is that it could possibly be
7 moderate, but this witness is saying that he is not clear
8 on that. It is likely, but it's not clear.

9 MR. LOONAM: Your Honor --

04:46:42 10 THE COURT: Is that --

11 THE WITNESS: Well, I would say that I think
12 it's -- that he is in the mild cognitive impairment to the
13 mild dementia range. I do think that it's unlikely that he
14 is at the moderate dementia range.

04:46:55 15 THE COURT: And that is not inconsistent from
16 what -- respectfully, from what he testified earlier, and
17 it's not inconsistent with his report.

18 MR. LOONAM: Okay. Your Honor, let's -- I --

19 THE COURT: And you can preserve the issue on
04:47:12 20 appeal --

21 MR. LOONAM: Yes, Your Honor.

22 THE COURT: -- but I am overruling the
23 objection.

24 MR. LOONAM: Understood.

04:47:17 25 BY MR. LOONAM:

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 Q. Turn to Page 11 of your expert report. It says:
2 "Based on the expected natural disease course,
3 neuroimaging findings, and hospitalizations for delirium,
4 it is plausible that Mr. Brockman would have progressed
5 from the MCI to dementia stage. However, I do not think
6 it is likely that he would be at the severe or end stages
7 of dementia."

8 That finding does not exclude moderate
9 dementia. Correct?

10 A. So, I don't state the word "moderate" in that
11 statement.

12 Q. The -- you found that the progression of cognitive
13 impairment between 2011 -- or 2021 and Two Thousand -- I'm
14 sorry. Reset.

15 You, in finding -- Paragraph 5, you state:
16 "I do not believe that his current assessments accurately
17 reflect his true level of cognitive impairment and am,
18 therefore, unable to determine whether his cognitive
19 impairment is severe enough to make him incompetent to
20 assist his defense."

21 And, so, in Paragraph 5, you credit the --
22 the government's position that Mr. Brockman is
23 malingering. Correct?

24 A. Yes. I think that he is exaggerating the severity of
25 the symptoms.

KATHY MILLER, RMR, CRR - kathy@miller-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 Q. And you are aware and you have watched all of the --
2 the deposition videos listed in your report. Correct?

3 A. Yes.

4 Q. And did you speak -- prior to your testimony today,
04:49:09 5 are you aware that Dr. Denney conducted a
6 neuropsychological testing and he believes that
7 Mr. Brockman is malingering?

8 A. Yes, I have read Dr. Denney's report.

9 Q. And have you spoken with -- well, did you learn of
04:49:32 10 Dr. Denney's -- Strike that.

11 But -- but, in any event, even though you
12 credit malingering, there's insufficient affirmative
13 evidence for you to determine whether or not Bob is
14 competent to proceed, to assist his defense. Correct?

04:49:55 15 MR. MAGNANI: Objection. Again, it is beyond
16 the scope of his expertise. He is asking about competence,
17 and I think this witness made clear he is a medical doctor.
18 Competence is not what he is prepared -- it's not what he
19 has testified about.

04:50:06 20 MR. LOONAM: It is in his report. It's right
21 here, Your Honor.

22 THE COURT: Okay. One second.

23 He doesn't offer an opinion about
24 competency. He says, "I am unable to determine..." So,
04:50:20 25 you can't turn it on him and say that he is qualified to

KATHY MILLER, RMR, CRR - kathy@miller-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 testify about incompetency. He says, "I am unable to
2 determine..." "I am not offering an opinion."

3 So, I am not letting -- I am not letting
4 him talk about competency, respectfully. Objection
5 overruled.

04:50:33

6 MR. LOONAM: Your Honor --

7 THE COURT: I am not going to let him do it,
8 Counsel. So, you have got the issue on appeal. You have
9 made the objection. I have overruled the objection. Let's
10 move on.

04:50:42

11 He is saying he is unable to determine and
12 make a call on competency. He is not doing it. If he had
13 issued an opinion on competency, I'd say fair game; you are
14 allowed to cross-examine him on it. But he hasn't. Since
15 he hasn't, we are not going there.

04:50:56

16 BY MR. LOONAM:

17 Q. Did you issue an opinion on competency in your
18 original report, Dr. Darby?

19 A. I don't know if I used the word "competency" in my
20 original report.

04:51:06

21 MR. LOONAM: Pull it up.

22 A. I don't remember.

23 BY MR. LOONAM:

24 Q. In Paragraph --

04:51:09

25 A. I did say that I felt like the types of things he was

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 demonstrating to me during our interview, such as pointing
2 me towards information, pieces of evidence, and the way he
3 was describing them were the things I thought would be
4 necessary to assist in his defense.

04:51:26

5 Q. To assist in his defense?

04:51:39

6 THE COURT: And that's fair game. I mean, as I
7 said earlier, he can testify about what he can do and what
8 he can't do, but making testimony -- offering testimony
9 about competency and incompetency, that's for the Court to
10 determine based on the facts of what he can and can't do.

04:51:57

11 So, you can testify -- can he answer
12 questions from counsel? Yes or no. Can he remember dates
13 and places and names in order to assist counsel in
14 defending him? Yes or no. But he can't testify,
15 respectfully, as to the issue of competency. That's for
16 the Court to decide.

04:52:11

17 So, you can ask him specific questions
18 like you were doing earlier about what he -- what he
19 believes Mr. Brockman can or can't do, but as far as the
20 general question as to whether or not he is competent to
21 assist in his defense, that's for the Court to determine.

22 So, I am not stopping you from asking him
23 the individual questions.

04:52:25

24 MR. LOONAM: No. I understand, Your Honor.
25 It's just, as I read 5, he explains the reason he is unable

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 to make the determination, is because he believes
2 Mr. Brockman is malingering. Correct? So, that's what I
3 was exploring.

04:52:38

4 THE COURT: Right. But he doesn't -- but he
5 doesn't reach the opinion as to competency or not
6 competency -- whether he is competent or incompetent; and,
7 if he did, I would have some issues with that as a lay
8 witness, untrained in legal issues. So, respectfully, we
9 are not going there.

04:52:56

10 MR. LOONAM: Okay, Your Honor.

11 BY MR. LOONAM:

12 Q. In -- in your report you state that Mr. Brockman is
13 at increased risk for progression over time. Correct?

14 A. Yes. I did state that.

04:53:21

15 Q. And that's increased risk versus other Alzheimer's
16 patients. Correct?

17 A. Correct. So, by having an episode of delirium, that
18 is associated with an increased risk of progression over
19 time.

04:53:38

20 Q. And as we discussed earlier, Mr. Brockman has had
21 three episodes of delirium over a relatively short period
22 of time. Correct?

23 A. Yes. He has had hospitalizations for delirium in
24 March, June and September.

04:53:52

25 Q. And the -- the repeated episodes of delirium would --

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 would -- that factors into the level of increased risk for
2 progression over time. Correct?

3 **A.** The fact that he has had delirium before is a risk
4 factor for that increased progression over time.

04:54:13

5 **Q.** And, again, not just the one incident but the
6 repeated incidents of delirium increase the risk of
7 increased progression. Correct?

8 **A.** Again, I don't know if the multiple episodes
9 increases that risk.

04:54:38

10 **Q.** And you note that Mr. Brockman is at risk for future
11 episodes of urinary infections. Correct?

12 **A.** Yes. He's had three over a short period of time
13 and -- yes.

04:55:01

14 **Q.** And this -- this report was about Mr. Brockman's
15 competency. Correct?

16 **A.** The report was to provide medical opinions that would
17 help in that determination.

18 **Q.** And, so, why did you include the information about
19 his increased risk for future episodes of urinary
20 infections?

04:55:18

21 **A.** That's a good question. I'm not sure if that's
22 actually relevant to that or not.

23 **Q.** You don't recall why you put it in there?

24 **A.** I -- I believe that it's true.

04:55:29

25 **Q.** Yeah. You believe he is at risk of additional

KATHY MILLER, RMR, CRR - kathy@millers-reporting.com

RYAN DARBY, M.D. - CROSS BY MR. LOONAM

1 urinary tract -- urinary infections. And would it be the
2 case, given his track record, that that would be
3 associated and likely lead, given his vulnerability --
4 demonstrated vulnerability, to additional bouts of
5 delirium in the future?

04:55:46

6 **A.** I think the fact that he has had urine infections
7 before with delirium, yes, would increase that risk, that
8 if he had a urinary infection in the future, he could
9 become delirious.

04:55:57

10 **Q.** And --

11 MR. LOONAM: Anything else?

12 Nothing further, Your Honor.

13 THE COURT: Okay. Redirect? At your
14 convenience, counsel.

04:56:14

15 MR. MAGNANI: Your Honor, I will just give
16 Mr. Loonam some time.

17 But, Your Honor, I would just like to
18 inquire of you before I begin about whether the
19 cross-examination, which I interpret to have been

04:56:26

20 impeaching the witness for what's not in the report to

21 suggest that the opinion was unreliable -- whether or

22 not -- You mentioned, if he had opened the door on cross,

23 that on redirect it may be appropriate to show the other

24 sources that this witness did not put in his report but

04:56:45

25 that he did consider in forming an opinion and making that

KATHY MILLER, RMR, CRR - kathy@miller-reporting.com

RYAN DARBY, M.D. - REDIRECT BY MR. MAGNANI

1 slide.

2 THE COURT: Right. I don't think he is -- I
3 don't think that he opened the door.

4 MR. MAGNANI: Okay.

04:56:53

5 THE COURT: I mean, because if he had said
6 that -- if he pulled up the exhibit and then said, 'Looking
7 at this, why is this consistent' -- or, you know, 'This
8 isn't consistent with what other doctors have seen or that
9 sort of thing, then he would have opened the door. I think

04:57:08

10 Mr. Loonam very carefully avoided going there to keep from
11 opening the door on that issue.

12 So, respectfully, I don't agree.

13 MR. MAGNANI: And --

14 THE COURT: So, you have 30 minutes.

04:57:19

15 MR. MAGNANI: And, Your Honor, just to sustain
16 your own 403 objection, anytime if this is not helpful, I
17 just want to clarify some language and things like that.

18 **REDIRECT EXAMINATION**

19 BY MR. MAGNANI:

04:57:29

20 **Q.** Okay. Dr. Darby, have you ever thought about words
21 as much as you have in the last couple of hours?

22 **A.** No, probably not.

23 **Q.** Are you more of a science guy or a word guy?

24 **A.** I'm more of a --

04:57:39

25 MR. LOONAM: Objection.

RYAN DARBY, M.D. - REDIRECT BY MR. MAGNANI

1 **A.** -- clinician and scientific researcher.

2 BY MR. MAGNANI:

3 **Q.** Okay. And we talked about things that are possible.

4 Is it fair to say that anything is

04:57:46

5 possible?

6 **A.** Yes. I mean, I think I would consider a large range
7 of possibilities when I am evaluating a clinical patient
8 or a research question.

04:57:58

9 **Q.** Is it possible that Mr. Brockman does, in fact, have
10 late-stage dementia? Is that possible?

11 **A.** Yes. I mean, I think anything would be possible.

12 **Q.** And is it possible that someone with that much
13 neurodegeneration in their brain could be cognitively
14 normal but just faking it?

04:58:11

15 **A.** Yes. So, that degree of impairment on the PET scan
16 could be seen in someone in a normal stage that is able to
17 compensate for that.

18 **Q.** So, putting aside what's possible, I just want to ask
19 you what in your expert opinion is likely. And what I

04:58:26

20 want to ask you is what is the most likely diagnosis, not
21 about the disease, not Alzheimer's or dementia, but about
22 the level of cognitive impairment -- impairment? Excuse
23 me.

04:58:39

24 **A.** So, I think the most likely diagnosis is that he is
25 at the stage of mild cognitive impairment. So, that is

RYAN DARBY, M.D. - REDIRECT BY MR. MAGNANI

04:58:56

1 based on the severity of the FDG PET scan and the fact
2 that I evaluated him in May of 2021 and felt that he was
3 at that stage. And there is a progression that can happen
4 over that period of time; that, again, you know, about 15
5 percent of people will progress to the mild dementia stage
6 in about a year, and that would be increased with an
7 episode of delirium. But I think that, you know, if you
8 are looking at the percentages knowing only that, that
9 would be my best estimate.

04:59:10

10 **Q.** And putting aside the Baylor doctors that we talked
11 about, what did Mr. Brockman's non-Baylor doctor, who was
12 treating his Parkinson's, diagnose Mr. Brockman as of
13 February 2021?

04:59:26

14 **A.** He was given a diagnosis of Parkinson's with mild
15 cognitive impairment.

16 **Q.** Now, you talk about in your report that it is -- I
17 mean, anything is possible. But you talk about that it is
18 reasonable that he would have progressed to the mild
19 dementia stage.

04:59:37

20 And my question is: We have talked about
21 a lot of different terminology, and is it fair to say that
22 some of the terminology is used inconsistent by different
23 people in your profession?

04:59:52

24 **A.** Yes. There are many different ways to measure and
25 categorize these types of problems.

KATHY MILLER, RMR, CRR - kathy@millers-reporting.com

RYAN DARBY, M.D. - REDIRECT BY MR. MAGNANI

1 Q. But is there a clear understanding of the
2 demarcation, the definitional demarcation, between MCI and
3 dementia?

05:00:08

4 A. So, yes. It's related to the loss of functional
5 independence related to the cognitive problems. So, if
6 the person can no longer do those things independently
7 because of the cognitive issues they are having, then that
8 is what we would call dementia.

05:00:20

9 Q. So, is it fair to say that while the different ways
10 we describe mild, moderate, severe or end-stage
11 dementia -- those are more subjective, but that the one
12 thing they all have in common is that dementia is where
13 your cognitive problems start to impact your ability to
14 function independently?

05:00:33

15 MR. LOONAM: Objection to leading.

16 THE COURT: Okay. Objection sustained. Please
17 rephrase.

18 BY MR. MAGNANI:

05:00:45

19 Q. So, how much -- how much consistency is there in your
20 profession about how people describe from mild to
21 end-stage dementia?

05:01:00

22 A. So, I think that there is -- you know, these are
23 diseases that progress along the gradual course. And, so,
24 the demarcations we have, you know, are based on these
25 different definitions, you know, and so they can be

RYAN DARBY, M.D. - REDIRECT BY MR. MAGNANI

1 applied, you know, in different ways, in different
2 contexts.

3 **Q.** And so -- but is there definitional certainty about
4 where -- I think you already answered the question.

05:01:14

5 So, when you say he may have crossed into
6 the dementia threshold, what are you -- what do you mean?

05:01:30

7 **A.** Well, I think that it -- he -- you know, if you were
8 to just look at the FDG PET scan -- so, that is something
9 that you could see in someone with mild dementia. If you
10 were to take into account that he had a mild cognitive
11 impairment, that he is 80, and that he had an episode of
12 delirium in the hospital -- somebody with that situation
13 could progress into the mild stage of dementia.

05:01:45

14 **Q.** And, so, what are the types of things that you would
15 see in a person who just crossed over into the -- just
16 past the dementia threshold but is mild? What would you
17 see in someone like that?

05:02:01

18 **A.** So, again, that would be difficulties with complex
19 decisionmaking tasks; so, financial decisionmaking,
20 needing more assistance with those types of things, not
21 being able to work in a job, and having more difficulty in
22 organizing one's thoughts.

23 **Q.** And then just a few more just potentially confusing
24 terminology.

05:02:11

25 What is the "CDR"?

RYAN DARBY, M.D. - REDIRECT BY MR. MAGNANI

1 **A.** The "CDR" is the clinical dementia rating scale.

2 **Q.** And is that -- is that the thing that defense counsel
3 was showing you on the document camera?

4 **A.** Well, I think that was a table referring to some of
05:02:25 5 the categories, but I believe the CDR -- I mean, it's
6 essentially a standardized interview and assessment with
7 the patient. So, you interview the patient's family
8 member to get a sense of the problems that they are having
9 from that. You ask them some questions about recent

05:02:44 10 events. And then there is a portion where you go through
11 and administer a small number of tests, but also interview
12 the patient themselves, and arrive at a metric for those
13 different categories about how severe you think the
14 impairment is in each of those six categories.

05:03:00 15 **Q.** So, that's pretty confusing, but the terms on the
16 top, from mild to severe, do those correlate with what you
17 have been describing as mild dementia or severe dementia?

18 **A.** So, many of the -- I am not sure I totally understand
19 your question.

05:03:18 20 **Q.** Is there a one-to-one correlation -- Do you remember
21 the exhibit I am talking about? Unfortunately, I think
22 there is only one copy floating around.

23 **A.** Yes, I do.

24 **Q.** So, do you remember that it had descriptors on the
05:03:28 25 top that -- you know, from mild to severe?

KATHY MILLER, RMR, CRR - kathy@millers-reporting.com

RYAN DARBY, M.D. - REDIRECT BY MR. MAGNANI

1 **A.** To severe. Yes.

2 **Q.** Okay. And what I am asking is: Is being in one of
3 those columns a one-to-one correlation with being mild
4 dementia or severe dementia?

05:03:41

5 **A.** No. So, I believe there is an algorithm that goes
6 through and takes those numbers, and there's certain
7 decision points, and arrives at an overall summary number
8 that is either zero being normal, 0.5 being mild cognitive
9 impairment; 1, 2 and 3 being mild, moderate and severe.

05:04:02

10 And, so, you know, being at that number in one category
11 doesn't necessarily mean that you are at that category for
12 that overall rating, but I don't know the specifics of how
13 they take those numbers and determine the overall level.

05:04:17

14 **Q.** And, so, when tools like this are developed in your
15 profession, are they developed with the assumption that
16 the presentation is a genuine one?

17 **A.** Yes. So, it's based on the interview with the study
18 partner and with the patient themselves as well as a small
19 amount of testing.

05:04:32

20 **Q.** So, does that account for the potential of
21 malingering or exaggeration, as you use the term?

22 **A.** Well, it -- no. So, it will be based on what the
23 patient and their family are reporting.

05:04:49

24 **Q.** Now, another just -- another thing that may create
25 some confusion -- I think we talked about this a little

RYAN DARBY, M.D. - REDIRECT BY MR. MAGNANI

1 bit on direct -- but Alzheimer's disease versus
2 Alzheimer's dementia. And I just wanted to know, because
3 I think on cross-examination, I think you might have said
4 that from Alzheimer's -- from the diagnosis of Alzheimer's
05:05:07 5 disease could be five to ten years, but I thought on
6 direct you said from Alzheimer's dementia it could be five
7 to ten years until death, and I was just hoping to
8 clarify.

9 **A.** Yes. So, the five to ten years is a rough estimate
05:05:20 10 of the time from dementia to death, and that's, you know,
11 a general ballpark figure for many types of dementias.

12 **Q.** So, just putting all this terminology aside, if you
13 accept at face value all of the presented symptoms of
14 Mr. Brockman, where would you diagnose him?

05:05:41 15 **A.** So, he would be at the moderate to severe stage.
16 And, so, he is needing assistance, essentially, for
17 every -- everything right now, from what the reports are
18 that I have read. And, so, he's needing assistance with
19 his grooming, with his self-care, with using the restroom,
05:05:57 20 having difficulty remembering where he is and recognizing
21 his home. So, those would be things that you would see at
22 the moderate or severe stage.

23 **Q.** And you said that is possible; he could be at that
24 stage?

05:06:07 25 **A.** Yes. I mean, those things, if accurate, would make

RYAN DARBY, M.D. - REDIRECT BY MR. MAGNANI

1 him at that stage.

2 **Q.** But why don't you think that he is?

3 **A.** Well, I think that it doesn't match the severity of
4 his brain imaging; and, so, again, it is not a one-to-one
05:06:21 5 correspondence. But without other things that I think are
6 reliable to make that estimate on, based just on the
7 imaging, I would say it's at the MCI or potentially the
8 mild dementia stage. Based just on the progression from
9 his initial evaluation in May, I would think it is at the
05:06:38 10 MCI or just dementia stage.

11 **Q.** And there was a lot of cross-examination about
12 heterogenous and neurons and glial and things that maybe
13 not everyone in this courtroom understands, but, as you
14 think about everything that you were confronted with on
05:06:54 15 cross-examination, is there anything that makes you
16 second-guess your opinion?

17 **A.** No. I still think that he -- that I don't have an
18 accurate assessment of his level of true cognitive
19 functioning, but, based on that disease course and based
05:07:07 20 on the imaging, that he would be at the mild cognitive
21 impairment or the mild dementia stage. That would be my
22 best estimate based on that evidence.

23 MR. MAGNANI: Thank you, Doctor. I have no
24 further questions.

05:07:20 25 THE COURT: Recross?

RYAN DARBY, M.D. - REDIRECT BY MR. MAGNANI

1 MR. LOONAM: Very, very brief.

2 THE COURT: Sure.

3 **REDCROSS-EXAMINATION**

4 BY MR. LOONAM:

05:07:23

5 Q. You were asked about the diagnosis from Dr. Lai on
6 recross.

7 A. Yes.

8 Q. Are you aware of Dr. Lai's diagnosis of the Defendant
9 in October of this year?

05:07:33

10 A. Yes. So, Dr. Lai evaluated the patient again in
11 October of this year and, based on the reports of his
12 functional status, diagnosed him with a level of dementia.

13 Q. And the reports on his functional status, I take --
14 Did you try and reach out to Tommy Barras or other
15 collateral witnesses to gain insight into the Defendant's
16 current level of impairment since you don't have these
17 videos available?

05:07:54

18 A. No, I did not contact him; Tommy Barras.

19 Q. Did you try and contact anyone else who would be able
20 to observe the defendant on a day-to-day basis in order to
21 inform your judgment?

05:08:10

22 A. Other than my interview with Dorothy Brockman in May,
23 I did not talk with anyone.

24 Q. For your supplemental report, did you reach out
25 to any -- attempt to reach out to any collateral witness

05:08:25

KATHY MILLER, RMR, CRR - kathy@miller-reporting.com

RYAN DARBY, M.D. - REDIRECT BY MR. MAGNANI

1 to gather information about Bob's current level of
2 impairment?

3 **A.** I did not personally reach out to anyone else.

4 MR. LOONAM: No further questions, Your Honor.

05:08:35

5 MR. MAGNANI: Your Honor, it's -- I just have
6 one question about the portion of that that was beyond the
7 scope of my exam, if I could just ask the Doctor why he
8 didn't reach out.

05:08:44

9 MR. LOONAM: Your Honor, there was nothing
10 beyond the scope. He talked about the diagnosis he would
11 reach on -- based on the information available.

05:09:01

12 THE COURT: Okay. I am going to allow just
13 one question, but we are stretching this way too far. So,
14 one question. That's it. However the witness answers,
15 we're done.

16 **REDIRECT EXAMINATION**

17 BY MR. MAGNANI:

18 **Q.** Dr. Darby, why did you not reach out to those people?

05:09:10

19 **A.** Well, in general, again, we were working on a team
20 with other expert witnesses, and my role was mostly
21 focused on the medical and neuroimaging. And in terms of
22 reaching out to other witnesses, the other experts in the
23 case were doing that, from my understanding.

24 MR. MAGNANI: Thank you, Doctor.

05:09:26

25 THE COURT: Anything further from this witness?

RYAN DARBY, M.D. - REDIRECT BY MR. MAGNANI

1 MR. MAGNANI: No, Your Honor.

2 MR. LOONAM: Nothing from the defense.

3 THE COURT: Thank you, Dr. Darby. Thank you so
4 much, sir. You are excused. You are free to remain in the
05:09:39 5 courtroom if you'd like.

6 THE WITNESS: Okay. Thank you.

7 THE COURT: Thank you.

8 Okay. Counsel, we have got about another
9 20 minutes. Who would be up next? And can we get started
05:09:47 10 in that amount of time?

11 MR. SMITH: Dr. Robert Denney. I think we can
12 get started maybe with some of his background and then we
13 can finish him tomorrow.

14 THE COURT: That's what I was hoping. Can we
05:09:58 15 go ahead and call Dr. Denney?

16 Hi, Dr. Denney. If you could, just raise
17 your right hand, sir.

18 (Witness sworn.)

19 THE WITNESS: Yes, sir.

05:10:14 20 THE COURT: Please take the stand.

21 And you may proceed whenever everyone is
22 ready.

23 MR. SMITH: Thank you. I think he can remove
24 the mask.

05:10:30 25 THE COURT: Oh, yes.

ROBERT DENNEY, Ph.D. - DIRECT BY MR. SMITH

1 MR. SMITH: Dr. Denney, you can remove that
2 mask if you want to make it easier to speak.

3 **ROBERT DENNEY, Ph.D.,**
4 duly sworn, testified as follows:

05:10:38

5 **DIRECT EXAMINATION**

6 BY MR. SMITH:

7 **Q.** Dr. Denney, what do you do for a living?

8 **A.** I am a clinical neuropsychologist.

05:10:47

9 **Q.** And how long have you been a clinical
10 neuropsychologist?

11 **A.** Since, basically, 1992.

12 **Q.** And could you just briefly describe for the Court,
13 what does a clinical neuropsychologist do?

05:11:03

14 **A.** A clinical neuropsychologist is a clinical
15 psychologist that specializes in how to measure the actual
16 behavioral functioning related to the brain and has
17 specialized training and knowledge in neuroanatomy,
18 neuropathology, and the specific types of tests that are
19 used to measure those functions that relate to brain
05:11:23 20 pathology.

21 We basically -- yeah, brain -- brain
22 behavior relationships. We specialize in that.

05:11:38

23 **Q.** And can you give the Court a sense of your employment
24 history, who you work for now, who you have worked for in
25 the past, since you have been a neuropsychologist?

KATHY MILLER, RMR, CRR - kathy@millers-reporting.com

ROBERT DENNEY, Ph.D. - DIRECT BY MR. SMITH

1 **A.** Yes. I did my clinical internship at the U.S.
2 Medical Center for federal prisoners. It was a general
3 clinical psychology internship. And they hired me
4 immediately after my internship to begin doing or
05:11:58 5 performing forensic studies for the U.S. District Courts,
6 although the first couple of months I worked in the
7 medical and surgical settings of the hospital because U.S.
8 Medical Center is a full, like about 1,300-bed
9 medical-surgical-psychiatric hospital designed for maximum
05:12:17 10 security federal male inmates.

11 So, the first couple of months I was in
12 medical and surgical services because I had to wait for my
13 psychology license to come through, which then did by
14 January 1st, and I switched over to do forensic studies
05:12:35 15 for the courts, where I was performing forensic psychology
16 and neuropsychology studies pertaining to legal issues. I
17 did that for eight years.

18 And then in 2000 I switched over to the
19 medical and surgical side of the hospital, on a full-time
05:12:54 20 basis over there, where I developed a neuropsychology
21 service and evaluated and treated inmates and also
22 consulted to the forensic side of the hospital to perform
23 neuropsychological studies for the forensic psychologists
24 and psychiatrists.

05:13:14 25 Then I retired out of the U.S. Medical

ROBERT DENNEY, Ph.D. - DIRECT BY MR. SMITH

05:13:35

1 Center at the end of 2011, and I continued teaching at the
2 Forest Institute. I had been teaching for, you know,
3 since -- you know, several years before. And I continued
4 to do that, and then I developed a -- I was the director
5 of the neuropsychology program at the Forest Institute,
6 which is a graduate program in clinical psychology, where
7 I taught neuroanatomy, neuropathology, neuropsychological
8 assessment, and some forensic assessment.

05:13:52

9 And then when the Forest Institute closed
10 I switched my affiliation over to the Citizens Memorial
11 Healthcare, or Citizens Memorial Hospital, where I work as
12 a neuropsychologist in the Missouri Memory Center and in
13 the neurology department of the hospital.

05:14:10

14 Also, ever since I finished my work at the
15 U.S. Medical Center, I have been doing private consulting
16 in legal-related cases.

17 **Q.** So, in sum total, how long were you at the U.S.
18 Medical Center? Is that a branch of the Bureau of
19 Prisons?

05:14:23

20 **A.** Yes, it is.

21 **Q.** How long were you there?

22 **A.** 21 years.

05:14:31

23 **Q.** So, I want to come back to that in a minute, but
24 before we get in -- dive into the kind of specific work
25 you do, can you give the Court a sense of your educational

ROBERT DENNEY, Ph.D. - DIRECT BY MR. SMITH

1 background?

2 **A.** Yes. I originally obtained a bachelor degree in
3 youth ministry and biblical studies from the Lutheran
4 Bible Institute. And then, because of a change of events,
05:14:46 5 my career path changed. I developed -- or completed a
6 Master's degree in psychology in 1989 and then completed
7 my doctor of psychology in 1991.

8 **Q.** And during the course of your career have you
9 become -- have you become certified by any medical boards
05:15:07 10 or the American -- I am going to get this wrong -- the
11 American Psychology -- is that right? A -- You're going
12 to have to help me.

13 **A.** Yeah.

14 **Q.** Are you board-certified in the appropriate board in
05:15:18 15 your profession?

16 **A.** I am.

17 **Q.** Can you explain what that is?

18 **A.** Yeah. The American Board of Professional Psychology
19 is the umbrella board, and within that board are specific
05:15:27 20 boards. And I was board-certified in forensic psychology
21 in 1997, and then I became board-certified in clinical
22 neuropsychology in 2003.

23 **Q.** And what is the difference?

24 **A.** Well, the board focusing on forensic psychology is
05:15:49 25 the application of psychological principles and techniques

ROBERT DENNEY, Ph.D. - DIRECT BY MR. SMITH

1 that is used in clinical psychology applied to the law.
2 And that could be, you know, personal injury; it could be
3 child custody. It could be whatever form of law that
4 psychology can be used in. For me, it was criminal
05:16:09 5 forensic psychology, criminal-related matters.

6 **Q.** And in your fields of study have you authored any
7 publications in these various areas?

8 **A.** Yes. Over the years I have focused mostly on the
9 application of clinical neuropsychology to the forensic --
05:16:29 10 criminal forensic setting. That has been my main area,
11 where I have published individual papers, some -- edited
12 books on the issue. And then I have also published in the
13 area of negative response by exaggeration and malingering
14 in that setting as well.

05:16:47 15 **Q.** So, I am going to come back to that word,
16 "malingering," and I am going to ask you to define it, but
17 before we do, have you published something particular,
18 definitive, in association with your board -- your board
19 certifications on malingering?

05:17:03 20 **A.** Well, yes. Prior to that, I mean, yes, I have. I
21 was a member of the American Academy of Clinical
22 Neuropsychology Consensus Conference on the Detection of
23 Negative Response by Exaggeration, Malingering, where we
24 got together and pounded out what was the consensus of our
05:17:26 25 field. And that was published in 2009 and then updated in

ROBERT DENNEY, Ph.D. - DIRECT BY MR. SMITH

1 2021.

2 Prior to that, I published a book -- I was
3 a co-author in a book, gosh, *Negative Response Bias in*
4 *Clinical Neuropsychology* or *Forensic Neuropsychology*, I
05:17:49 5 think, and there was another one, *Detection of Deception*,
6 those two books.

7 Q. So, if we could unpack some of that, when you were at
8 the Bureau of Prisons American Medical -- what was it?
9 American Medical -- was that called the hospital? When
05:18:03 10 you went --

11 A. Oh. U.S. Medical Center.

12 Q. U.S. Medical Center. I'm sorry. Specifically, did
13 you work with inmates in the Bureau of Prisons?

14 A. Yes.

05:18:12 15 Q. And what did you do with them? What was your -- what
16 was your task?

17 A. I had lots of different roles.

18 Q. Okay.

19 A. Okay? Like I said, for the first eight years I was
05:18:23 20 performing -- full-time performing forensic studies:
21 competency to stand trial, sanity, dangerousness, need for
22 inpatient mental health treatment for potential sentencing
23 issues, occasional mitigation.

24 At the same time we would rotate in and
05:18:42 25 out of our diagnostic and observation unit. That's where

ROBERT DENNEY, Ph.D. - DIRECT BY MR. SMITH

1 sentenced inmates would come in from other institutions
2 referred to the Medical Center for potential
3 hospitalization, and we would have to evaluate them and
4 evaluate their need for inpatient mental health treatment.

05:18:59

5 So, we would rotate in and out of that on
6 a regular kind of basis at the same time as we were
7 performing forensic studies.

05:19:13

8 **Q.** So, when you were performing this work, was part of
9 the work that you did determining whether certain inmates
10 were competent to stand trial in a criminal trial?

11 **A.** Oh, yes. Most of those evaluations were competency.

12 **Q.** During the course of your career, how many such
13 inmates did you evaluate for competency to stand trial?

05:19:28

14 **A.** I'm not sure exactly how many. It is somewhere
15 between 600 and 1,000.

16 **Q.** And in that 600 to 1,000 defendants that you
17 evaluated for legal competency, did you always find them
18 competent to stand trial?

05:19:44

19 **A.** No. And I actually kept track of it because it was a
20 common question that would come up during testimony. My
21 rate of finding somebody not competent to proceed was
22 about -- it varied from 23 to 25 percent. I kept a
23 running total.

05:20:01

24 **Q.** So, can you walk -- briefly walk the Court through --
25 how would you perform these evaluations? What was your

ROBERT DENNEY, Ph.D. - DIRECT BY MR. SMITH

1 tools? What was in your tool kit, whether a defendant was
2 competent to stand trial?

05:20:15

3 **A.** Sure. Well, these were -- keep in mind these were
4 inpatient evaluations. They were 4241(b) studies, but
5 they were also a percentage of 4241(d) studies.

05:20:33

6 And, so, for the (b) studies we were
7 looking at a 30-day period of time of inpatient evaluation
8 where we would -- where I would interview them during the
9 intake session coming in. I would interview them
10 throughout that 30-day period. Part of those interviews
11 would include history-taking with them, you know,
12 obviously, depending on their setting, how they were -- If
13 they were in a locked setting, or an open population
14 setting, I might be seeing them every day.

05:20:48

15 But then I would interview them pertaining
16 to not only their history but a clinical evaluation -- or
17 a clinical interview pertaining to their mental health
18 difficulties.

05:21:01

19 I would also interview them related to
20 their understanding of the legal proceedings against them
21 and the courtroom participants, what their plans were
22 related to their case, what their thoughts were related to
23 the whole process.

05:21:17

24 I would administer testing. The type of
25 testing I administered varied depending on the nature of

ROBERT DENNEY, Ph.D. - DIRECT BY MR. SMITH

1 the situation. For any cases that had memory or potential
2 brain pathology, I would do a full neuropsychological
3 workup on them as well.

05:21:35

4 And then I would -- I would get -- I would
5 acquire records, whatever records I could get. Typically,
6 I would call the -- the U.S. Attorney's Office and ask for
7 records. I would call the defense counsel on record and
8 ask for records and information.

05:21:52

9 Oftentimes I would interview the defense
10 counsel, if counsel was willing, pertaining to their
11 perception of interactions with the defendant.

05:22:10

12 I would oftentimes interview family
13 members, a mother, father, whoever could give me some
14 insight about this person's prior history before they were
15 arrested.

16 And then I would take all that information
17 and write a report.

05:22:23

18 **Q.** So, is that, essentially, what you were retained to
19 do by the Department of Justice in this case, with some
20 variation, of course, but evaluate the defendant here for
21 his competency to stand trial using these tools that you
22 just described to the Court?

23 **A.** Yeah, using whatever tools I thought were most
24 appropriate to get the job done.

05:22:34

25 **Q.** Now, is it correct that you're board-certified as

ROBERT DENNEY, Ph.D. - DIRECT BY MR. SMITH

1 both a clinical psychologist and a forensic psychologist?

2 **A.** Well, no. I am board-certified as a forensic
3 psychologist and a clinical neuropsychologist.

05:22:50

4 **Q.** Can you explain to the Court the difference between
5 forensic psychology and clinical psychology? What is the
6 difference in those terms?

05:23:08

7 **A.** Sure. There is, really, a lot of overlap to it, but
8 a clinical psychology certification -- There is a board-
9 certified clinical psychology certification, and that's
10 where it really focuses on diagnostic skill, but a lot
11 more work in treatment as well, psychotherapy, providing,
12 you know, short-term therapy, behavioral therapy, those
13 sort of things to help a patient get better.

05:23:28

14 Typically, you know, major illness issues:
15 Schizophrenia, bipolar disorder, PTSD issues, depression,
16 anxiety, what have you. Whereas, forensic psychology
17 covers all of that that would be included in clinical
18 psychology but then takes that information and applies it
19 to the law.

05:23:45

20 And in the example of criminal forensics,
21 you would be applying it to statutory law related to
22 competency, and we would study case law. Maybe it was the
23 statutory definitions of "sanity." Whatever the issue is,
24 we would apply our knowledge of psychology and ability to
25 evaluate a defendant and then answer legal questions for

05:24:06

ROBERT DENNEY, Ph.D. - DIRECT BY MR. SMITH

1 the court.

2 As a part of our training at the U.S.
3 Medical Center, it included -- in addition to regular
4 clinical psychology work, there was specialized training
05:24:22 5 in forensics as well, which included weekly case law
6 seminars where we covered all of mental health case law,
7 which is pretty large, but we would focus mostly on the
8 Supreme Court level and circuit court level. But there
9 were some smaller court decisions, too, that were really
05:24:41 10 rather meaningful and guided our understanding of -- of
11 how to apply these psychological principles to the legal
12 setting.

13 Q. So, when a forensic psychologist evaluates a
14 defendant, is that different -- is the objective different
05:24:59 15 than when a clinical psychologist interviews or evaluates
16 a defendant?

17 A. Oh, yes.

18 Q. What's the difference?

19 A. Yeah, there's a tremendous amount of differences, and
05:25:07 20 those differences can be outlined in -- in general terms
21 initially, but then they -- they result in more specific
22 differences.

23 One of them is the roles are different
24 between the provider, or the clinician, and the patient.
05:25:27 25 I'll use the word "patient" in a clinical setting, because

ROBERT DENNEY, Ph.D. - DIRECT BY MR. SMITH

1 it's a clinical provider and a patient. In the forensic
2 setting they are not a patient. They are a defendant or a
3 plaintiff. And there is -- there's a -- that's important
4 because there are certain mindset that a clinician has and
5 a patient has that come together to allow treatment to
6 occur. And some of those assumptions are that the patient
7 wants to get better, that the patient is going to be as
8 honest as they're possibly able to with you.

9 And the other side of the coin is, for the
10 provider, there's a role, too. You're a therapeutic role.
11 You engage in a relationship with that patient that is
12 more therapeutic, and you are trying to draw therapeutic
13 alliance with them so that they can get better, so you can
14 help foster them getting better.

15 That's very -- that's wrong in a forensic
16 relationship. You don't create a therapeutic alliance
17 with the defendant. You have to view them a little bit
18 more objectively in a way. You have to evaluate what they
19 are saying to you. It may not -- recognizing that they
20 may not want to be there. They may not necessarily want
21 to get better. They may not have the same plan that you
22 have as an evaluator. And, so, that changes the methods
23 you use as well. And so -- and it also changes the
24 information sources you obtain.

25 In a forensic-type setting you want to get

ROBERT DENNEY, Ph.D. - DIRECT BY MR. SMITH

1 the investigative material. You want to get all of those
2 objective sort of findings. If you can, you get school
3 records, you know, whatever would be relevant for the
4 particular case. In a clinical setting you most typically
5 rely on what the patient tells you and maybe a family
6 member, but you're not going to get all these other more
7 objective information. That's one of the differences in
8 the way they are carried out.

9 Additionally, when you perform testing in
10 a forensic setting, you must include multiple measures of
11 validity to verify that they are actually putting forth
12 proper task engagement. In other words, it's like putting
13 forth the right amount of effort or, you know, actually
14 want to do good on testing --

15 **Q.** So --

16 **A.** -- as opposed to trying to look impaired.

17 **Q.** So, in this case you evaluated the defendant here
18 twice; is that right?

19 **A.** Yes.

20 **Q.** Once in May and once in October?

21 **A.** Yes.

22 **Q.** And, so, which type of evaluation did you perform? A
23 clinical evaluation or a forensic evaluation?

24 **A.** Forensic evaluations, both of them.

25 **Q.** Now, in -- when you say "both of them," both

KATHY MILLER, RMR, CRR - kathy@miller-reporting.com

ROBERT DENNEY, Ph.D. - DIRECT BY MR. SMITH

1 evaluations were forensic --

2 **A.** Yes.

3 **Q.** -- not both clinical and forensic?

4 **A.** I'm sorry. Yes.

05:28:26

5 **Q.** I just want to be clear.

6 Okay. So, is it -- when you do an
7 evaluation, whether it's clinic -- psychological
8 evaluation, whether it's clinical or forensic, the data
9 that you are getting to come to your conclusion, is a

05:28:39

10 large part of that based on statements and tasks that the
11 defendant -- that the subject, whether patient, defendant,
12 whatever, performs?

13 **A.** Yes.

14 **Q.** So, is there an assumption or -- Well, let me
15 rephrase the question.

05:28:54

16 Is it important in your -- in the accuracy
17 of your evaluation, whether the defendant or the patient,
18 whoever you are evaluating, is telling you the truth or
19 may be trying to fudge it a little bit?

05:29:05

20 **A.** It's -- I would say it's important in both of the
21 cases.

22 **Q.** Why?

23 **A.** Well, because it's going -- it's going to change
24 your -- it could significantly impact your conclusion.

05:29:21

25 If -- if what they're -- if what the person is telling you

ROBERT DENNEY, Ph.D. - DIRECT BY MR. SMITH

1 is not accurate, it could very well lead you to the wrong
2 diagnostic conclusion.

05:29:38

3 **Q.** Now, you used the term -- two terms you have used so
4 far in your testimony. The first one I want to ask you
5 about is this term "malingering."

6 Can you describe, in your profession, what
7 that term means, for the Court?

05:29:57

8 **A.** Yes. Basically, the definition of "malingering" is
9 somebody who is attempting to appear more impaired or less
10 capable in order to obtain a secondary gain. It's an
11 intentional process to obtain a -- some form of secondary
12 benefit.

05:30:18

13 Definitionally, you know, somebody in the
14 military who is trying to get out of military service and
15 they may feign a medical board type of problem. It could
16 be somebody who is applying for Social Security
17 disability, and they -- they want the disability money
18 and, so, they are trying to look impaired during the
19 testing. That's the notion of malingering.

05:30:41

20 **Q.** Is there a way you can test a subject for
21 malingering?

05:31:02

22 **A.** Well, you test the subject for the validity of the
23 testing. In other words, you use measures that test for
24 proper task engagement, and from those measures -- how the
25 person performs on those measures then gives you insight

ROBERT DENNEY, Ph.D. - DIRECT BY MR. SMITH

1 as to whether the other test data you have collected is
2 valid or not.

3 If your validity tests suggests a person
4 was not performing properly and putting forth proper task
05:31:14 5 engagement -- in other words, doing their best, wanting to
6 do good with you, and they don't do that, then all of your
7 neuropsychological test data is not reflective of their
8 genuine abilities.

9 I can give you an example. You -- you --

05:31:32 10 A high school -- a school psychologist comes in a junior
11 high and is told, 'Hey, you need to evaluate the IQ of
12 this student.' And they drag the student out of class and
13 you sit down with the student and you say, 'Hey. I'm
14 going to give you an IQ test. My name is Dr. Denney.'

05:31:48 15 And the kid says, 'Who are you?' and 'Why am I here?' and
16 'Why do you have to give me this test?' And they don't
17 want to do the test. They don't want to be there. They
18 just want to go home. But I force them to kind of go

19 through the test. But if they are not putting forth the
05:32:02 20 optimal task engagement, they don't want to do their best,
21 they don't care, the scores -- maybe the score is 80, but
22 that is not their genuine ability. Their IQ may have been
23 100 or 110. We have no idea. But it under-represents the
24 genuine ability. That's why it's important.

05:32:20 25 Q. So, is this validity testing that you're describing

ROBERT DENNEY, Ph.D. - DIRECT BY MR. SMITH

1 for the Court -- is this different than the cognitive
2 testing that you did?

05:32:35

3 **A.** Yes. Validity testing can basically be broken down
4 into two. There is multiple ways to break it down, but
5 there is two large categories. One is performance
6 validity testing, and the other is a symptom validity
7 testing, although I'll tell you the literature is all over
8 the board, historically, because that's a more recent
9 categorization.

05:32:50

10 Performance validity testing talks about
11 is the person's actual performance during testing valid?
12 Like are they putting forth a reasonably good effort?
13 They are trying to do good. They are trying to do well on
14 your test.

05:33:04

15 Symptom validity testing is more a symptom
16 report. And, so, those measures would be like somebody --
17 like a questionnaire, a depression questionnaire, or an
18 anxiety questionnaire, or any kind of symptom
19 questionnaire. And there are scales in those
20 questionnaires that will try to identify whether somebody
21 is exaggerating their symptom report or maybe even denying
22 and minimizing their symptom report, the opposite side of
23 that coin.

05:33:21

24 And, so, some of these -- and, so, in
25 looking at the performance validity tests, some of them

05:33:35

ROBERT DENNEY, Ph.D. - DIRECT BY MR. SMITH

05:33:51

05:34:06

05:34:20

05:34:38

05:34:58

1 are freestanding. You take this test off the shelf and
2 you administer it along with your other tests. But some
3 of the performance validity tests are called "embedded."
4 Maybe it's a regular IQ test, for example, a standardized
5 IQ test that is off the shelf that any psychologist would
6 use. But over time we have learned that there are certain
7 characteristics in that test that, if they come up a
8 certain way, is indicative of the test not being performed
9 with proper task engagement. Those would be called
10 embedded validity indicators, or measures, or tests, or
11 what have you.

12 **Q.** And it's these validity tests you used to determine
13 whether a subject is malingering or not?

14 **A.** Well, yes. Thank you for getting back to the point.

15 These tests only tell you whether the test
16 data are valid or not. And if you conclude that the test
17 data are not valid, you have to stop and ask yourself,
18 okay, why are they not valid? Are they not valid because
19 the person is severely impaired? Maybe they really are
20 impaired so badly that they would fail this test. Or is
21 it impaired because of psychological, emotional
22 difficulties? And it's not -- if it's not that they are
23 being intentional about it, maybe it's an unconscious kind
24 of process, like somatoform disorder or conversion
25 disorder.

ROBERT DENNEY, Ph.D. - DIRECT BY MR. SMITH

1 So, you look at the entire clinical
2 situation and decide whether there is obvious secondary
3 gain present. And if there is obvious secondary gain,
4 then you -- you basically fall in the malingering
05:35:14 5 determination, because that meets the definition for
6 "malingering."

7 **Q.** So, did you apply some of these validity tests when
8 you evaluated the defendant in this case, both in May and
9 October?

05:35:22 10 **A.** Yes, I did.

11 **Q.** And are these validity tests that you have just
12 described to the Court -- are these tests only done by
13 forensic psychologists or are they also done by clinical
14 psychologists?

05:35:34 15 **A.** Well, they're done by psychologists in numerous
16 different settings. In my -- in my office in the clinic,
17 in the dementia clinic, I include validity measures in all
18 of my assessments, because, first of all, you don't know
19 when somebody shows up with an under-the-surface plan for
05:35:56 20 disability, and you didn't know that. Sometimes there is
21 psychiatric problems that get in the way with their
22 ability to perform well on your testing. And without the
23 validity tests included, I would not be able to tell
24 whether this test is valid or not. It may look very
05:36:14 25 strange. It may be inconsistent with the person's actual

ROBERT DENNEY, Ph.D. - DIRECT BY MR. SMITH

1 presentation, and that might be significant enough for me
2 to say, look, this is not valid. But I want to have
3 objective measures in there to help guide me in terms of
4 giving me some confidence that the test data are valid.

05:36:31

5 **Q.** So, in your forensic psychological evaluation of this
6 defendant twice, once in May and once in October, did you
7 come to an opinion of whether or not this defendant is
8 competent to stand trial in this case?

9 **A.** Yes, I did.

05:36:45

10 **Q.** And what is that opinion?

11 **A.** It's my -- my professional opinion that he is
12 competent to proceed.

13 **Q.** And is that the same opinion you had in May and
14 October?

05:36:55

15 **A.** Yes.

16 **Q.** And what do you base that opinion on?

17 **A.** A lot of things. I base it on the -- the -- first of
18 all -- I'll just try to get them out of the way -- the
19 neuroimaging findings suggesting that his condition is
20 mild or very mild, the -- that's the functional imaging.

05:37:16

21 The structural imaging, the MRI, particularly when you
22 look at the temporal lobes and the areas of the brain that
23 I would be most concerned about pertaining to memory
24 problems. Those areas are within normal limits in their
25 quantitative size.

05:37:37

ROBERT DENNEY, Ph.D. - DIRECT BY MR. SMITH

1 I look at his presentations during my
2 examination with him. I look at his behaviors, the --
3 some of the things that were inconsistent that suggested
4 to me that he was exaggerating.

05:37:54 5 I also administered competency-specific
6 testing. In May, it was the competency assessment
7 instrument. In October, it was the evaluation and
8 competency to stand trial. "ECST-R," it's called. And on
9 these measures his performance was reasonably normal.

05:38:15 10 Now, I'll give you a caveat, that he was
11 reticent to answer questions during multiple times, that
12 he said, 'Well, I think we're deviating from the road here
13 and I don't want to answer that because you're getting too
14 much into my case.' And that, in and of itself, right
05:38:30 15 there is meaningful because that means he's got the
16 wherewithal to say, 'You know, I think I want to protect
17 my rights and not talk to you when I don't think it's
18 appropriate.' That's meaningful.

19 Now, he said it was advice -- advice of
05:38:45 20 counsel. I don't know if it was or not. Regardless, it
21 looked to me like he had proper motivation to defend
22 himself.

23 The test data suggesting gross
24 exaggeration, so I can't rely on the test data to say that
05:39:03 25 he is impaired. I don't believe there is any valid

KATHY MILLER, RMR, CRR - kathy@millers-reporting.com

ROBERT DENNEY, Ph.D. - DIRECT BY MR. SMITH

1 objective data to say that he's got substantial
2 impairment.

3 I also considered my own experience
4 related to evaluating criminal defendants who had mild
05:39:20 5 dementia -- MCI and mild dementia. And just because a
6 criminal defendant has mild dementia does not mean that
7 that person is not competent. People with mild dementia
8 can be competent, particularly if they have got very good
9 counsel and the nature of their case is such that the
05:39:40 10 investigative material is very thorough and it is set up
11 in such a way that defense can reconstruct exactly what
12 happened. Whether or not there is a potential for alibi
13 would be relevant to that.

14 So, just because somebody has some mild
05:40:00 15 memory difficulties -- and I -- we'll end up getting into
16 the words "mild" and "moderate," I am sure. But just
17 because a person is mild -- has mild dementia does not
18 necessarily mean he is not competent. He could be not
19 competent, but I have seen many people with mild dementia
05:40:17 20 that are competent.

21 MR. SMITH: So, at this point, Your Honor, I am
22 going to start getting into the tests. I think this might
23 be a good place to break if Your Honor wants to break at
24 this time.

05:40:24 25 THE COURT: Perfect.

ROBERT DENNEY, Ph.D. - DIRECT BY MR. SMITH

1 Everyone, we thank you for following the
2 Court's schedule. I think we are right on track.

3 Can we start again tomorrow morning at
4 9:00? And if there is anything that you want to take up
05:40:36 5 before 9:00, can you -- when you come in, can you let my
6 case manager know, and then I'll come out? I usually come
7 in, as you saw this morning, right around 8:30. So, if
8 there is something that you need to address earlier, let me
9 know and we will do that before 9:00.

05:40:51 10 MR. SMITH: Very good, Your Honor. Thank you.

11 MR. LOONAM: Thank you, Your Honor.

12 THE COURT: Anything else we need to talk about
13 this afternoon?

14 MR. SMITH: Not from the government.

05:40:58 15 MR. LOONAM: Not from defendant.

16 THE COURT: Okay. Well, thank you all. Have a
17 good night and we will see you tomorrow morning at 9:00.
18 (Concluded at 5:40 p.m.)

19 COURT REPORTER'S CERTIFICATE

20 I, Kathleen K. Miller, certify that the foregoing is a
21 correct transcript from the record of proceedings in the
22 above-entitled matter.

23 DATE: 11/18/21 /s/ Kathleen K. Miller

24 Kathleen K. Miller, RPR, RMR, CRR

25

KATHY MILLER, RMR, CRR - kathy@miller-reporting.com

		6
' 21 [1] - 32:5 ' because [1] - 123:3 ' hey [2] - 160:11, 160:13 ' it [1] - 122:6 ' looking [1] - 133:6 ' other [1] - 123:5 ' this [1] - 133:7 ' well [2] - 69:16, 165:12 ' who [1] - 160:15 ' why [2] - 160:15, 160:16 ' you [1] - 165:16	2011 [3] - 93:6, 126:13, 147:1 2015 [2] - 93:11, 93:15 2017 [3] - 93:15, 93:24, 93:25 2019 [4] - 30:12, 31:20, 33:22, 88:23 202-514-9623 [1] - 1:22 2020 [3] - 20:5, 30:16, 31:24 2021 [22] - 1:6, 4:2, 5:3, 9:25, 16:11, 20:16, 24:3, 32:4, 47:2, 47:6, 78:7, 79:22, 80:7, 99:24, 108:5, 112:3, 124:1, 126:13, 135:2, 135:13, 150:1 21 [1] - 147:22 212-326-3939 [1] - 2:8 2208 [1] - 1:21 23 [1] - 151:22 24th [2] - 112:3, 112:11 25 [2] - 11:14, 151:22 250 [1] - 2:7 28th [2] - 108:5, 111:6	6 [1] - 100:21 600 [2] - 151:15, 151:16 65 [1] - 87:12
/		7
/s [1] - 167:23		7 [4] - 80:6, 83:1, 83:2, 111:6 70 [1] - 46:16 70s [1] - 87:14 713-250-5087 [1] - 2:13 717 [1] - 2:3 77002 [2] - 2:4, 2:13 78 [1] - 46:12
0		8
0.5 [3] - 63:2, 65:11, 139:8	3	80 [3] - 28:8, 137:11, 160:21 80-year-old [2] - 46:13, 49:12 8004 [1] - 2:12 803(18)(A) [1] - 56:7 832-239-3694 [1] - 2:4 8:30 [1] - 167:7
1	3 [2] - 63:2, 139:9 30 [2] - 11:14, 133:14 30-day [2] - 152:7, 152:10 31 [1] - 25:23 31st [1] - 47:25 33 [1] - 3:3 3300 [1] - 2:3 34 [2] - 11:14, 25:24 35 [1] - 25:24 38 [3] - 79:25, 90:20, 90:22 39 [3] - 91:8, 99:25, 118:3 3:01 [1] - 75:8 3:15 [1] - 75:5 3:28 [1] - 75:8	9
1 [3] - 1:13, 63:2, 139:9 1,000 [2] - 151:15, 151:16 1,300-bed [1] - 146:8 1.7 [1] - 60:3 1.7-fold [1] - 60:8 100 [1] - 160:23 10281 [1] - 2:8 11 [1] - 126:1 11/18/21 [1] - 167:23 110 [1] - 160:23 11th [1] - 47:25 12 [2] - 9:21, 10:23 12th [3] - 78:6, 80:7, 99:24 133 [1] - 3:4 142 [1] - 3:4 143 [1] - 3:5 145 [1] - 3:7 15 [5] - 1:6, 4:2, 74:25, 121:14, 135:4 150 [1] - 1:21 18 [1] - 79:22 1989 [1] - 148:6 1991 [1] - 148:7 1992 [1] - 145:11 1997 [1] - 148:21 1:27 [2] - 1:5, 4:3 1st [1] - 146:14	4	9 [3] - 118:3, 118:8, 118:9 91 [1] - 11:12 93 [1] - 25:23 93-A [1] - 26:1 95 [1] - 106:16 9:00 [4] - 167:4, 167:5, 167:9, 167:17
2	4 [1] - 3:3 40 [1] - 4:15 40-A [1] - 4:16 403 [3] - 58:11, 58:13, 133:16 4241(b) [1] - 152:4 4241(d) [1] - 152:5 45 [1] - 112:13 49 [3] - 54:5, 58:9, 59:4 4:21-CR-09 [1] - 1:3 4:40 [1] - 124:10 4:45 [1] - 124:10	A
2 [2] - 63:2, 139:9 2.2-fold [1] - 60:6 20 [1] - 144:9 2000 [1] - 146:18 20002 [1] - 1:22 2003 [1] - 148:22 2009 [1] - 149:25	5	abilities [8] - 6:15, 6:24, 24:19, 24:21, 31:1, 33:3, 36:20, 160:8 ability [16] - 30:10, 32:11, 50:12, 62:25, 66:14, 67:21, 69:22, 75:24, 76:3, 90:11, 136:13, 154:24, 160:22, 160:24, 163:22 able [25] - 6:5, 6:9, 8:13, 8:22, 8:25, 25:20, 29:1, 30:10, 30:21, 44:19, 54:6, 68:5, 68:6, 68:7, 68:24, 69:2, 69:16, 71:2, 73:6, 117:10, 134:16, 137:21, 142:19, 156:8, 163:23 abnormal [4] - 18:11, 101:3, 111:22, 112:20 abnormalities [5] - 85:8, 88:21, 88:25, 102:1, 102:3 abnormality [4] - 102:5, 102:7, 115:8, 115:11 abnormally [1] - 115:17 above-entitled [1] - 167:22 absence [1] - 120:19 absolutely [1] - 105:13 academic [3] - 53:12, 94:1, 98:3 academy [1] - 149:21 accelerate [2] - 10:18, 52:14

accelerated [2] - 52:10, 57:23
accelerating [1] - 22:22
acceleration [5] - 10:20, 22:23, 57:13, 57:22, 60:20
accept [1] - 140:13
accepted [1] - 63:6
access [1] - 11:4
according [4] - 66:1, 71:20, 107:9, 113:25
account [3] - 14:24, 137:10, 139:20
accounts [1] - 29:13
accumulating [1] - 109:1
accumulation [2] - 107:3, 109:24
accuracy [1] - 158:16
accurate [16] - 9:2, 9:10, 25:21, 33:2, 33:5, 34:25, 36:16, 42:11, 71:22, 84:2, 87:15, 92:19, 121:17, 140:25, 141:18, 159:1
accurately [3] - 24:20, 29:1, 126:16
acknowledgement [1] - 41:22
acquire [1] - 153:5
acting [1] - 115:17
active [2] - 17:16
activities [2] - 63:21, 65:21
activity [11] - 16:3, 16:22, 19:13, 38:15, 39:6, 101:4, 101:9, 101:24, 102:12, 102:14, 109:20
actual [11] - 24:19, 31:12, 58:6, 62:5, 71:25, 96:6, 101:22, 121:17, 145:15, 161:11, 163:25
acute [9] - 9:19, 23:6, 24:20, 47:17, 47:21, 53:10, 55:6, 116:5, 116:10
AD [1] - 58:1
addition [7] - 44:2, 63:11, 80:24, 101:16, 111:5, 115:21, 155:3
additional [4] - 101:7, 102:1, 131:25, 132:4
additionally [1] - 157:9
address [2] - 70:13, 167:8
addresses [2] - 56:15, 73:4
adequately [1] - 69:17
administer [3] - 138:11, 152:24, 162:2
administered [3] - 47:25, 152:25, 165:5
adult [1] - 46:12
adults [1] - 59:21
advance [1] - 19:25
advanced [1] - 7:3
advancement [1] - 16:6
advice [4] - 67:19, 67:20, 165:19
advise [1] - 67:21
adviser [1] - 12:14
affect [6] - 28:2, 38:11, 49:5, 61:15, 89:17, 90:11
affected [3] - 66:15, 73:5, 100:20
affecting [4] - 37:7, 38:7, 39:24, 42:10
affects [2] - 38:13, 89:12
affiliate [1] - 98:4
affiliation [1] - 147:10
afternoon [5] - 33:16, 33:17, 75:6,

95:19, 167:13
AFTERNOON [1] - 1:10
afterwards [1] - 23:21
age [10] - 43:18, 46:8, 60:14, 87:11, 87:16, 87:20, 87:22, 87:25, 118:13
age.. [3] - 118:4, 118:11, 118:12
ago [5] - 73:16, 73:19, 73:21, 93:18, 93:19
agree [20] - 33:18, 39:21, 39:25, 40:2, 40:15, 43:8, 46:15, 49:2, 50:1, 53:1, 55:9, 63:6, 86:21, 86:22, 86:25, 92:6, 112:23, 112:24, 125:3, 133:12
agreed [4] - 56:17, 57:1, 88:24, 112:1
agreement [1] - 4:11
agrees [4] - 55:15, 55:21, 56:2, 56:15
ahead [3] - 68:14, 74:24, 144:15
al [1] - 87:7
algorithm [5] - 63:3, 71:8, 71:12, 71:19, 139:5
alibi [1] - 166:12
alleges [2] - 33:24, 33:25
alliance [2] - 156:13, 156:16
allow [2] - 143:12, 156:5
allowed [2] - 122:19, 128:14
almost [2] - 42:3, 103:22
alone [1] - 41:20
alteration [3] - 52:7, 57:11, 57:20
alternate [1] - 44:18
Alzheimer's [79] - 10:17, 37:1, 40:6, 40:22, 40:24, 41:1, 41:3, 41:4, 41:11, 41:13, 41:14, 41:18, 41:21, 42:7, 42:8, 42:25, 43:12, 43:17, 43:24, 44:8, 44:11, 44:24, 45:4, 45:9, 45:17, 45:18, 45:21, 45:25, 46:3, 52:8, 52:23, 58:1, 59:21, 66:3, 66:4, 66:17, 66:22, 79:17, 80:12, 83:7, 83:14, 83:16, 83:18, 84:16, 84:24, 90:19, 91:10, 91:24, 92:2, 92:5, 96:5, 96:9, 96:12, 96:18, 96:23, 98:2, 98:5, 98:8, 98:9, 98:22, 98:24, 99:16, 99:17, 99:20, 107:11, 107:14, 107:21, 108:21, 111:1, 112:17, 112:21, 130:15, 134:21, 140:1, 140:2, 140:4, 140:6
amazing [1] - 94:14
amazingly [1] - 37:21
ambit [1] - 7:17
AMERICA [1] - 1:3
American [8] - 53:22, 53:23, 148:10, 148:11, 148:18, 149:21, 150:8, 150:9
amount [15] - 18:9, 20:21, 22:9, 22:16, 22:17, 32:22, 90:5, 109:11, 113:15, 114:5, 114:8, 139:19, 144:10, 155:19, 157:13
amyloid [17] - 41:6, 99:5, 99:9, 108:1, 108:4, 108:13, 108:17, 108:18, 108:19, 109:8, 111:10, 111:15, 111:17, 111:25, 112:2, 112:20
amyloids [1] - 109:1
analysis [10] - 70:4, 101:3, 101:11, 101:13, 101:14, 103:1, 103:20, 107:2,

114:11, 116:1
ancient [1] - 28:5
anesthesia [1] - 10:9
angles [2] - 16:17, 16:19
answer [14] - 8:13, 29:1, 56:23, 56:25, 69:11, 102:16, 102:18, 105:5, 105:10, 121:25, 129:11, 154:25, 165:11, 165:13
answered [1] - 137:4
answering [1] - 25:17
answers [3] - 11:8, 25:21, 143:14
antibiotics [1] - 9:4
antipsychotic [1] - 47:25
anxiety [5] - 36:5, 36:7, 36:9, 154:16, 161:18
anytime [4] - 10:14, 48:21, 66:24, 133:16
anyway [1] - 48:11
apairment [1] - 134:22
apathy [6] - 44:24, 45:1, 45:5, 45:8, 45:10
apologies [3] - 34:10, 55:12, 58:23
apologize [3] - 26:23, 102:18, 118:1
apology [1] - 48:10
appeal [2] - 125:20, 128:8
appear [4] - 11:5, 24:7, 89:17, 159:9
APPEARANCES [1] - 1:16
appeared [6] - 11:6, 11:7, 14:11, 25:17, 58:3
application [2] - 148:25, 149:9
applied [2] - 137:1, 149:1
applies [2] - 45:11, 154:18
apply [3] - 154:24, 155:11, 163:7
applying [2] - 154:21, 159:16
appointment [1] - 94:3
appreciate [1] - 95:19
approach [2] - 80:1, 80:2
appropriate [6] - 27:10, 28:22, 132:23, 148:14, 153:24, 165:18
approximate [1] - 8:2
Archives [2] - 53:18, 59:7
area [21] - 17:19, 18:10, 19:16, 38:5, 38:6, 38:7, 38:9, 38:10, 38:13, 38:15, 39:3, 39:4, 39:5, 39:6, 81:12, 89:20, 89:22, 101:24, 102:14, 149:10, 149:13
areas [42] - 16:20, 16:21, 16:24, 17:17, 17:22, 18:1, 18:3, 18:4, 19:2, 20:20, 21:3, 34:13, 34:18, 37:6, 37:8, 37:15, 37:18, 38:11, 38:21, 43:21, 82:2, 82:23, 84:12, 84:14, 88:16, 89:8, 89:9, 89:19, 100:12, 100:19, 101:7, 101:11, 102:3, 102:4, 102:15, 102:21, 102:22, 102:24, 149:7, 164:22, 164:24
arousal [2] - 47:17, 47:22
arrested [1] - 153:15
arrive [1] - 138:12
arrives [1] - 139:7
arteries [1] - 13:14
article [16] - 54:24, 55:14, 55:16, 59:5, 59:6, 60:18, 60:22, 60:25, 85:20,

<p>85:24, 86:2, 86:12, 87:1, 88:4, 88:11, 88:23</p> <p>articles [1] - 56:4</p> <p>aside [4] - 90:16, 134:18, 135:10, 140:12</p> <p>aspect [2] - 86:13, 87:3</p> <p>aspects [1] - 36:20</p> <p>assessment [6] - 66:3, 138:6, 141:18, 147:8, 165:6</p> <p>assessments [3] - 119:7, 126:16, 163:18</p> <p>assigned [3] - 94:9, 94:16, 97:16</p> <p>assist [7] - 69:23, 126:20, 127:14, 129:4, 129:5, 129:13, 129:21</p> <p>assistance [5] - 70:25, 77:9, 137:20, 140:16, 140:18</p> <p>assistant [2] - 94:4, 94:5</p> <p>Assistant [1] - 94:5</p> <p>assisted [1] - 2:16</p> <p>associate [1] - 94:6</p> <p>associated [12] - 36:6, 36:7, 36:11, 60:5, 65:9, 65:24, 65:25, 66:11, 72:18, 76:22, 130:18, 132:3</p> <p>associates [1] - 30:18</p> <p>Association [2] - 53:22, 53:24</p> <p>association [3] - 49:7, 59:20, 149:18</p> <p>assumption [4] - 88:19, 88:25, 139:15, 158:14</p> <p>assumptions [1] - 156:6</p> <p>atrophied [1] - 39:4</p> <p>atrophy [5] - 38:25, 39:2, 88:7, 115:12, 115:14</p> <p>attempt [1] - 142:25</p> <p>attempting [1] - 159:9</p> <p>attention [1] - 36:22</p> <p>attorney's [1] - 153:6</p> <p>attorneys [1] - 13:17</p> <p>attributable [1] - 76:21</p> <p>attributing [1] - 92:22</p> <p>atypical [2] - 15:14, 96:5</p> <p>audience [1] - 104:22</p> <p>August [10] - 16:11, 20:6, 20:13, 20:16, 22:6, 32:21, 112:3, 112:10, 114:4, 114:10</p> <p>author [4] - 55:2, 85:25, 86:17, 150:3</p> <p>authored [1] - 149:6</p> <p>authorization [1] - 13:2</p> <p>authors [1] - 85:24</p> <p>available [3] - 23:15, 142:17, 143:11</p> <p>average [4] - 46:2, 46:11, 87:11, 104:8</p> <p>avidity [2] - 101:20, 101:21</p> <p>avoided [1] - 133:10</p> <p>aware [19] - 6:3, 6:18, 29:3, 34:1, 51:19, 51:21, 52:19, 53:3, 61:5, 61:7, 61:13, 61:16, 62:18, 113:9, 113:12, 119:19, 127:1, 127:5, 142:8</p> <p>awareness [3] - 6:13, 6:15, 8:12</p>	<p style="text-align: center;">B</p> <p>bachelor [1] - 148:2</p> <p>background [3] - 59:19, 144:12, 148:1</p> <p>bad [5] - 17:23, 17:24, 27:17, 29:8, 29:9</p> <p>badly [1] - 162:20</p> <p>ballpark [2] - 46:4, 140:11</p> <p>banging [3] - 104:19, 104:21, 105:6</p> <p>bark [1] - 88:2</p> <p>Barras [3] - 30:18, 142:14, 142:18</p> <p>basal [2] - 34:19, 37:7</p> <p>base [3] - 32:23, 164:16, 164:17</p> <p>based [32] - 29:15, 30:7, 31:11, 31:12, 32:17, 32:20, 41:19, 53:12, 62:3, 87:25, 105:9, 114:6, 121:12, 121:21, 123:22, 124:4, 126:2, 129:10, 135:1, 136:24, 139:17, 139:22, 141:6, 141:8, 141:19, 141:22, 142:11, 143:11, 158:10</p> <p>basis [3] - 142:20, 146:20, 151:6</p> <p>Baylor [2] - 135:10, 135:11</p> <p>bear [2] - 10:5, 54:8</p> <p>became [4] - 14:21, 33:25, 48:5, 148:21</p> <p>become [4] - 39:4, 132:9, 148:9</p> <p>becomes [2] - 42:1, 74:1</p> <p>bed [1] - 48:6</p> <p>BEFORE [1] - 1:11</p> <p>began [1] - 11:21</p> <p>begin [6] - 6:12, 14:13, 41:5, 99:13, 132:18, 146:4</p> <p>beginning [5] - 9:22, 47:5, 116:23, 118:4, 119:2</p> <p>begins [1] - 118:11</p> <p>behavior [3] - 64:4, 95:25, 145:22</p> <p>Behavioral [1] - 94:16</p> <p>behavioral [5] - 94:20, 95:25, 97:9, 145:16, 154:12</p> <p>behaviors [1] - 165:2</p> <p>belief [1] - 99:7</p> <p>believes [3] - 127:6, 129:19, 130:1</p> <p>bell [2] - 106:23, 106:24</p> <p>below [2] - 94:9</p> <p>bench [2] - 104:24, 105:6</p> <p>benches [2] - 104:20, 104:21</p> <p>beneficial [1] - 6:19</p> <p>benefit [1] - 159:12</p> <p>best [5] - 18:24, 135:9, 141:22, 160:5, 160:20</p> <p>beta [1] - 109:1</p> <p>better [7] - 8:11, 59:11, 154:13, 156:7, 156:13, 156:14, 156:21</p> <p>between [24] - 19:8, 22:1, 22:4, 22:6, 22:10, 22:15, 31:9, 31:10, 32:20, 38:21, 41:2, 44:18, 44:20, 49:8, 62:21, 70:16, 95:4, 102:6, 109:19, 126:13, 136:2, 151:15, 154:4, 155:24</p> <p>beyond [11] - 31:1, 67:24, 69:17, 73:8, 118:25, 120:23, 124:3, 124:5, 127:15, 143:6, 143:10</p>	<p>Bias [1] - 150:3</p> <p>Bible [1] - 148:4</p> <p>biblical [1] - 148:3</p> <p>big [1] - 27:17</p> <p>bilateral [3] - 34:11, 101:6, 101:20</p> <p>bill [1] - 6:1</p> <p>binding [1] - 101:24</p> <p>binds [5] - 17:6, 17:8, 17:10, 17:12, 17:13</p> <p>biological [3] - 41:2, 41:4, 41:6</p> <p>biology [1] - 96:10</p> <p>bipolar [1] - 154:15</p> <p>birth [1] - 73:11</p> <p>birthday [1] - 73:13</p> <p>bit [6] - 17:2, 75:1, 77:22, 140:1, 156:17, 158:19</p> <p>bladder [2] - 12:8, 14:5</p> <p>blood [11] - 9:19, 18:9, 47:7, 47:13, 47:15, 48:22, 50:19, 50:21, 50:24, 82:2, 82:22</p> <p>blue [3] - 16:16, 16:20, 19:2</p> <p>board [14] - 148:14, 148:19, 148:20, 148:21, 148:24, 149:18, 153:25, 154:2, 154:8, 159:15, 161:8</p> <p>Board [1] - 148:18</p> <p>board-certified [5] - 148:14, 148:20, 148:21, 153:25, 154:2</p> <p>boards [2] - 148:9, 148:20</p> <p>Bob [7] - 47:25, 48:5, 48:11, 51:2, 78:2, 78:6, 127:13</p> <p>Bob's [4] - 49:10, 49:22, 50:15, 143:1</p> <p>bodies [8] - 79:18, 80:12, 91:11, 91:25, 92:3, 92:4, 112:18, 112:22</p> <p>body [8] - 17:7, 37:1, 82:19, 83:7, 83:19, 90:18, 98:18, 98:19</p> <p>boil [1] - 85:5</p> <p>bolded [1] - 119:1</p> <p>book [2] - 150:2, 150:3</p> <p>books [2] - 149:12, 150:6</p> <p>Boris [1] - 1:19</p> <p>boris.bourget@usdoj.gov [1] - 1:24</p> <p>boss [2] - 94:23, 94:25</p> <p>boss's [1] - 94:25</p> <p>bosses [1] - 95:1</p> <p>bottom [1] - 20:16</p> <p>Bourget [1] - 1:19</p> <p>bouts [6] - 49:20, 50:14, 51:3, 51:24, 132:4</p> <p>box [1] - 6:5</p> <p>bradykinesia [1] - 35:3</p> <p>bradyphrenia [1] - 37:10</p> <p>Brain [1] - 85:17</p> <p>brain [101] - 16:1, 16:2, 16:4, 16:6, 16:17, 16:19, 16:20, 16:22, 17:15, 17:17, 17:19, 18:2, 18:4, 18:10, 19:4, 19:11, 19:12, 19:13, 19:15, 19:20, 23:22, 23:24, 23:25, 24:7, 31:7, 34:12, 34:15, 34:18, 37:6, 37:18, 37:21, 38:1, 38:3, 38:11, 38:15, 38:17, 39:6, 42:4,</p>
--	--	---

42:6, 49:6, 49:10, 49:13, 49:22, 50:2, 50:6, 51:5, 74:5, 74:7, 74:10, 81:9, 81:12, 81:14, 81:17, 81:18, 81:20, 81:21, 82:1, 82:6, 82:10, 82:11, 82:15, 84:2, 84:6, 84:13, 84:14, 84:16, 85:15, 85:16, 88:12, 88:21, 89:1, 89:8, 89:19, 89:21, 90:1, 90:4, 100:12, 100:20, 101:8, 102:23, 106:7, 109:1, 109:11, 113:11, 115:14, 115:22, 115:25, 116:7, 134:13, 141:4, 145:16, 145:19, 145:21, 153:2, 164:22

brain's [3] - 23:23, 50:11, 90:10

branch [1] - 147:18

break [7] - 4:21, 42:13, 68:14, 74:24, 161:4, 166:23

brief [1] - 142:1

briefly [2] - 145:12, 151:24

bring [1] - 19:6

Brockman [52] - 5:3, 5:5, 5:23, 7:23, 8:6, 8:11, 9:17, 11:1, 14:2, 14:17, 22:15, 22:20, 23:3, 25:9, 26:5, 31:15, 32:2, 33:19, 33:21, 33:25, 34:3, 35:13, 39:25, 46:23, 68:10, 77:23, 80:17, 97:11, 98:13, 108:4, 108:25, 110:10, 117:11, 118:15, 118:17, 118:24, 119:5, 119:12, 119:14, 123:18, 126:4, 126:22, 127:7, 129:19, 130:2, 130:12, 130:20, 131:10, 134:9, 135:12, 140:14, 142:22

BROCKMAN [1] - 1:6

Brockman's [15] - 8:8, 10:5, 16:19, 16:22, 20:4, 20:15, 32:7, 34:6, 34:15, 69:21, 107:4, 111:23, 114:2, 131:14, 135:11

broken [1] - 161:3

brought [1] - 14:9

bug [2] - 11:23, 12:7

bunch [1] - 110:9

Bureau [3] - 147:18, 150:8, 150:13

BY [34] - 4:19, 13:23, 28:18, 33:15, 42:20, 43:11, 53:17, 54:4, 54:12, 56:24, 57:9, 57:19, 59:3, 65:3, 68:16, 70:1, 75:15, 77:19, 80:5, 86:11, 91:1, 105:21, 117:7, 118:2, 125:25, 128:16, 128:23, 130:11, 133:19, 134:2, 136:18, 142:4, 143:17, 145:6

C

calculate [1] - 71:12

calculated [1] - 76:25

camera [1] - 138:3

cameras [1] - 5:9

can't [1] - 123:4

capabilities [1] - 31:5

capable [2] - 76:6, 159:10

capacities [1] - 30:22

captured [1] - 106:16

car [1] - 12:12

care [13] - 5:25, 6:2, 45:15, 63:20,

75:21, 75:25, 76:4, 76:6, 76:10, 76:11, 77:13, 140:19, 160:21

career [3] - 148:5, 148:8, 151:12

carefully [1] - 133:10

carried [1] - 157:8

cars [1] - 14:6

CASE [3] - 4:6, 54:8, 75:9

case [39] - 7:17, 9:16, 9:17, 10:21, 16:22, 17:7, 17:9, 22:22, 24:2, 24:23, 25:8, 26:20, 34:1, 41:24, 75:4, 78:4, 83:22, 93:5, 99:3, 100:2, 104:25, 109:7, 110:1, 110:5, 114:2, 132:2, 143:23, 152:22, 153:19, 154:22, 155:5, 155:6, 157:4, 157:17, 163:8, 164:8, 165:14, 166:9, 167:6

cases [6] - 36:19, 96:6, 98:25, 147:16, 153:1, 158:21

catch [1] - 40:22

catch-all [1] - 40:22

categories [7] - 62:24, 71:10, 71:18, 138:5, 138:13, 138:14, 161:5

categorization [1] - 161:9

categorize [1] - 135:25

categorizing [2] - 63:7, 63:12

category [9] - 63:22, 71:7, 71:11, 71:16, 72:22, 76:9, 76:19, 139:10, 139:11

caudate [2] - 101:21, 107:4

caused [1] - 38:9

causing [2] - 23:8, 109:21

caveat [1] - 165:10

CDK [2] - 13:5, 14:7

CDR [6] - 63:5, 71:20, 77:1, 137:25, 138:1, 138:5

cell [1] - 82:9

cells [6] - 81:25, 82:4, 82:16, 82:21, 82:22

center [7] - 97:14, 97:15, 97:17, 97:19, 98:3, 98:8, 98:9

Center [11] - 98:5, 146:2, 146:8, 147:1, 147:12, 147:15, 147:18, 150:11, 150:12, 151:2, 155:3

centers [1] - 95:12

CEO [1] - 31:21

cerebellum [1] - 39:11

cerebrum [1] - 111:23

certain [14] - 11:7, 31:14, 42:11, 43:18, 45:13, 56:3, 69:13, 71:1, 76:22, 139:6, 151:9, 156:4, 162:6, 162:8

certainly [10] - 49:15, 49:18, 50:5, 51:2, 51:17, 51:22, 61:12, 67:1, 82:19, 120:2

certainty [1] - 137:3

CERTIFICATE [1] - 167:19

certification [2] - 154:8, 154:9

certifications [1] - 149:19

certified [7] - 148:9, 148:14, 148:20, 148:21, 153:25, 154:2, 154:9

certify [1] - 167:20

chairman [1] - 95:3

chance [1] - 28:6

change [22] - 9:15, 14:25, 15:23, 16:5, 21:6, 21:24, 22:6, 22:8, 22:14, 22:16, 22:17, 22:25, 23:3, 25:2, 32:20, 35:24, 55:6, 58:3, 109:12, 116:2, 148:4, 158:23

changed [3] - 41:20, 43:19, 148:5

changes [21] - 19:19, 19:20, 19:21, 20:24, 20:25, 21:2, 22:24, 31:7, 36:1, 41:6, 41:7, 53:10, 109:17, 109:18, 109:22, 113:15, 113:24, 115:4, 156:22, 156:23

characteristics [2] - 12:11, 162:7

characterize [1] - 50:3

characterized [1] - 55:7

charge [1] - 79:7

chart [1] - 21:11

check [2] - 9:8, 35:18

chief [1] - 94:24

child [1] - 149:3

Christopher [1] - 1:19

christopher.magnani@usdoj.gov [1] - 1:24

cingulate [3] - 101:6, 107:4, 107:5

circuit [2] - 38:13, 155:8

circuits [1] - 37:7

cite [2] - 84:19, 84:20

cited [2] - 84:17, 84:21

citing [2] - 58:7, 87:7

Citizens [2] - 147:10, 147:11

Claassen [2] - 94:19, 94:20

clarify [5] - 24:9, 44:10, 71:6, 133:17, 140:8

class [1] - 160:12

classic [1] - 83:23

clean [2] - 90:20, 90:22

clear [16] - 25:15, 30:9, 31:9, 31:10, 105:12, 115:10, 123:6, 123:7, 123:9, 124:22, 125:4, 125:7, 125:8, 127:17, 136:1, 158:5

clearly [3] - 29:9, 30:13, 32:10

client [5] - 67:20, 67:22, 69:1, 69:9

clinic [11] - 20:7, 51:12, 95:16, 95:21, 97:3, 99:14, 99:17, 158:7, 163:16, 163:17

clinical [60] - 5:10, 5:12, 18:20, 19:1, 21:15, 30:11, 41:3, 41:11, 41:16, 41:25, 42:24, 43:1, 44:17, 62:18, 62:23, 63:10, 63:11, 65:5, 65:19, 97:5, 98:11, 99:1, 107:11, 110:25, 113:19, 114:15, 117:8, 117:9, 134:7, 138:1, 145:8, 145:9, 145:13, 145:14, 146:1, 146:3, 147:6, 148:21, 149:1, 149:9, 149:21, 152:16, 152:17, 154:1, 154:3, 154:5, 154:8, 154:9, 154:17, 155:4, 155:15, 155:25, 156:1, 157:4, 157:23, 158:3, 158:8, 163:1, 163:13

Clinical [1] - 150:4

clinically [3] - 90:2, 105:25, 117:12

clinician [4] - 63:15, 134:1, 155:24, 156:4

clinician's ^[1] - 62:24
clinicians ^[2] - 40:13, 63:12
clinics ^[4] - 95:12, 97:7, 97:8, 97:10
clip ^[15] - 4:15, 4:20, 4:24, 5:2, 5:17, 8:1, 11:11, 11:13, 11:15, 14:5, 25:23, 26:1, 26:4, 26:25, 27:2
clips ^[1] - 4:11
close ^[2] - 30:18, 73:3
closed ^[1] - 147:9
closely ^[2] - 109:23, 110:25
co ^[3] - 85:25, 86:17, 150:3
co-author ^[3] - 85:25, 86:17, 150:3
coded ^[2] - 74:5, 74:9
coexist ^[1] - 51:9
coexisting ^[2] - 98:24, 98:25
cognition ^[3] - 39:24, 50:13, 55:7
cognitive ^[91] - 5:6, 5:14, 5:18, 6:12, 6:15, 6:22, 6:23, 6:24, 7:1, 7:2, 7:7, 8:14, 8:20, 10:5, 18:16, 18:18, 20:11, 24:19, 24:21, 25:19, 30:10, 30:19, 30:22, 30:25, 31:5, 31:13, 32:2, 32:7, 32:11, 32:19, 33:3, 36:18, 36:20, 37:3, 37:16, 40:3, 40:7, 40:17, 40:20, 43:13, 43:15, 44:2, 44:4, 44:6, 49:13, 50:9, 50:11, 50:15, 51:3, 52:7, 52:13, 57:12, 57:21, 58:2, 59:8, 59:21, 60:6, 60:8, 60:19, 61:4, 62:9, 62:22, 65:10, 65:12, 66:24, 69:22, 76:5, 80:25, 92:9, 94:21, 97:9, 108:20, 108:22, 109:10, 120:18, 124:1, 125:12, 126:12, 126:17, 126:18, 134:22, 134:25, 135:15, 136:5, 136:7, 136:13, 137:10, 139:8, 141:18, 141:20, 161:1
Cognitive ^[1] - 94:17
cognitively ^[2] - 41:5, 134:13
coin ^[2] - 156:9, 161:23
collateral ^[2] - 142:15, 142:25
collect ^[1] - 77:17
collected ^[1] - 160:1
color ^[1] - 19:2
colors ^[5] - 16:20, 18:1, 18:10, 18:14, 19:2
column ^[1] - 65:16
columns ^[1] - 139:3
combative ^[1] - 48:5
combination ^[1] - 111:2
combine ^[1] - 66:22
coming ^[3] - 5:16, 40:11, 152:9
comment ^[7] - 60:23, 93:3, 93:5, 101:14, 102:24, 118:21, 119:10
commented ^[5] - 22:1, 91:2, 92:12, 92:25, 96:16
comments ^[3] - 22:8, 29:5, 102:3
common ^[7] - 39:16, 39:18, 51:14, 86:13, 87:2, 136:12, 151:20
commonly ^[2] - 51:9, 51:11
communicate ^[1] - 68:8
communicated ^[1] - 110:17
communicating ^[3] - 67:3, 67:7, 67:13
communication ^[1] - 38:21

Communications ^[1] - 85:18
companies ^[2] - 113:4, 113:6
company ^[2] - 31:22, 113:10
compare ^[11] - 5:10, 14:16, 20:12, 20:13, 20:25, 28:19, 102:2, 105:23, 106:1, 106:11, 116:12
compared ^[5] - 18:13, 18:15, 21:8, 22:18, 96:12
compares ^[1] - 103:2
comparing ^[11] - 16:4, 83:12, 100:17, 103:11, 103:16, 103:24, 104:1, 104:15, 106:4, 106:8, 114:9
comparison ^[4] - 18:17, 19:24, 104:3, 106:12
compensate ^[3] - 50:12, 90:11, 134:17
competence ^[4] - 79:10, 107:18, 127:16, 127:18
COMPETENCY ^[1] - 1:9
competency ^[21] - 67:25, 127:24, 128:4, 128:12, 128:13, 128:17, 128:19, 129:9, 129:15, 130:5, 130:6, 131:15, 150:21, 151:11, 151:13, 151:17, 153:21, 154:22, 165:5, 165:6, 165:8
competency-specific ^[1] - 165:5
competent ^[15] - 69:23, 127:14, 129:20, 130:6, 151:10, 151:18, 151:21, 152:2, 164:8, 164:12, 166:7, 166:8, 166:18, 166:19, 166:20
complain ^[1] - 45:5
complaint ^[2] - 40:3, 40:17
complaints ^[1] - 40:19
complete ^[2] - 25:20, 102:18
completed ^[2] - 148:5, 148:6
completely ^[3] - 42:7, 89:18, 90:2
complex ^[2] - 70:21, 137:18
complexity ^[1] - 71:1
complicated ^[3] - 37:21, 39:8, 81:15
component ^[1] - 116:9
computer ^[2] - 2:16, 100:13
computer-assisted ^[1] - 2:16
concept ^[1] - 103:10
concern ^[1] - 105:17
concerned ^[4] - 10:19, 27:21, 64:20, 164:23
concerns ^[9] - 5:21, 5:24, 6:7, 6:18, 30:19, 75:2, 95:22, 98:17
conclude ^[1] - 162:16
concluded ^[1] - 13:21
Concluded ^[1] - 167:18
conclusion ^[3] - 158:9, 158:24, 159:2
conclusions ^[1] - 122:16
condition ^[2] - 48:23, 164:19
conditions ^[1] - 12:20
conduct ^[1] - 117:10
conducted ^[2] - 102:25, 127:5
conducting ^[1] - 116:1
conference ^[4] - 5:4, 5:8, 14:4, 149:22
confidence ^[1] - 164:4
confirmed ^[2] - 34:6, 120:9

confirms ^[1] - 101:16
confronted ^[1] - 141:14
confused ^[3] - 11:7, 14:11, 25:15
confusing ^[3] - 42:12, 137:23, 138:15
confusion ^[1] - 139:25
confusional ^[3] - 9:20, 23:6, 47:21
connected ^[5] - 38:7, 38:11, 39:4, 39:6, 89:6
connecting ^[1] - 85:21
connection ^[1] - 39:12
connections ^[1] - 38:18
consensus ^[2] - 149:22, 149:24
consequences ^[1] - 70:13
consider ^[4] - 39:19, 66:2, 132:25, 134:6
consideration ^[2] - 23:4, 23:12
considered ^[6] - 14:24, 15:2, 30:1, 65:12, 102:8, 166:3
considers ^[1] - 63:17
consist ^[1] - 82:6
consisted ^[1] - 82:12
consistency ^[1] - 136:19
consistent ^[13] - 7:6, 18:19, 18:25, 21:22, 21:23, 23:25, 41:23, 92:8, 96:17, 111:15, 124:17, 124:18, 133:8
consistent' ^[1] - 133:7
consists ^[2] - 34:24, 81:21
consulted ^[1] - 146:22
consulting ^[1] - 147:15
contact ^[2] - 142:18, 142:19
contents ^[1] - 68:6
context ^[6] - 4:23, 9:12, 103:9, 110:21, 110:22
contexts ^[1] - 137:2
continued ^[5] - 15:12, 30:16, 49:24, 147:1, 147:3
Continued ^[1] - 4:18
continues ^[2] - 28:25, 49:24
continuum ^[1] - 63:7
contradicts ^[1] - 83:15
contrast ^[1] - 111:23
contribute ^[3] - 10:13, 22:23, 46:14
contributed ^[1] - 22:21
contributions ^[1] - 86:25
control ^[2] - 103:2, 103:5
convenience ^[1] - 132:14
conventional ^[2] - 88:20, 88:24
conversation ^[2] - 73:21, 73:23
conversion ^[1] - 162:24
convey ^[2] - 70:4
copy ^[5] - 80:3, 80:4, 90:21, 90:22, 138:22
Corey ^[1] - 1:18
corey.smith@usdoj.gov ^[1] - 1:23
correct ^[144] - 16:14, 18:22, 24:14, 24:24, 29:9, 33:7, 33:19, 33:22, 34:1, 34:4, 34:7, 34:12, 37:2, 39:14, 39:17, 40:23, 43:25, 44:3, 44:7, 45:20, 46:24, 48:1, 48:6, 48:13, 49:11, 50:16, 52:8,

52:13, 53:8, 59:22, 60:25, 61:4, 61:9, 61:10, 62:22, 65:13, 65:14, 65:21, 66:1, 67:4, 70:5, 70:22, 72:3, 72:4, 72:8, 72:14, 72:15, 73:14, 73:17, 74:12, 76:2, 76:7, 77:14, 78:3, 78:11, 79:10, 79:19, 80:14, 80:18, 80:22, 81:1, 81:8, 83:11, 83:12, 83:17, 84:25, 85:6, 85:12, 86:14, 87:9, 87:18, 87:24, 88:13, 88:17, 88:18, 89:1, 89:6, 89:7, 89:13, 89:18, 90:7, 93:8, 93:23, 94:2, 94:6, 95:13, 95:17, 96:9, 96:25, 97:6, 97:12, 98:11, 98:12, 100:2, 100:25, 101:9, 101:18, 102:5, 102:23, 103:5, 103:11, 104:4, 104:12, 106:8, 106:9, 106:13, 106:24, 107:5, 107:11, 108:2, 108:5, 108:17, 109:1, 109:5, 109:8, 110:10, 110:14, 110:22, 113:5, 113:21, 114:4, 114:25, 115:12, 115:17, 115:22, 116:14, 119:9, 119:25, 120:3, 126:9, 126:23, 127:2, 127:14, 130:2, 130:13, 130:16, 130:17, 130:22, 131:2, 131:7, 131:11, 131:15, 153:25, 167:21

correctly [1] - 115:5

correlate [1] - 138:16

correlation [3] - 109:19, 138:20, 139:3

correspond [11] - 16:20, 18:10, 20:7, 20:9, 43:21, 76:16, 106:14, 108:20, 109:23, 109:24, 110:25

correspondence [3] - 90:10, 90:14, 141:5

corresponding [3] - 20:17, 39:11, 115:14

corresponds [3] - 18:9, 41:8, 103:7

cortex [1] - 37:19

cortical [1] - 111:22

cortices [2] - 85:11, 88:9

corticobasal [1] - 96:4

Counsel [2] - 4:8, 128:8

counsel [27] - 43:2, 58:24, 64:16, 67:4, 67:8, 67:14, 67:18, 67:19, 69:3, 69:16, 69:23, 74:23, 76:13, 76:16, 116:16, 120:25, 124:8, 129:12, 129:13, 132:14, 138:2, 144:8, 153:7, 153:10, 165:20, 166:9

country [1] - 54:18

couple [4] - 110:9, 133:21, 146:6, 146:11

course [23] - 8:8, 9:14, 15:13, 20:10, 20:24, 20:25, 26:25, 29:15, 32:16, 32:25, 48:14, 52:14, 114:1, 114:6, 119:4, 121:19, 124:4, 126:2, 136:23, 141:19, 148:8, 151:12, 153:20

Court [14] - 27:1, 129:9, 129:16, 129:21, 145:12, 145:23, 147:25, 151:24, 153:22, 154:4, 155:8, 159:7, 161:1, 163:12

court [3] - 155:1, 155:8, 155:9

COURT [86] - 1:1, 2:11, 4:7, 4:13, 4:17, 11:17, 26:2, 33:10, 33:13, 42:14,

42:16, 43:5, 43:8, 53:16, 54:3, 55:11, 55:23, 56:10, 56:22, 57:4, 57:7, 57:14, 57:17, 58:16, 59:2, 64:16, 64:22, 65:2, 68:3, 68:14, 69:6, 74:23, 75:10, 75:13, 77:7, 80:2, 86:7, 105:3, 105:9, 105:14, 105:16, 105:19, 116:16, 116:19, 116:24, 117:2, 117:25, 120:14, 121:3, 121:5, 121:8, 121:11, 121:23, 122:17, 122:25, 123:13, 123:20, 124:6, 124:11, 124:24, 125:10, 125:15, 125:19, 125:22, 127:22, 128:7, 129:6, 130:4, 132:13, 133:2, 133:5, 133:14, 136:16, 141:25, 142:2, 143:12, 143:25, 144:3, 144:7, 144:14, 144:20, 144:25, 166:25, 167:12, 167:16, 167:19

Court's [2] - 58:13, 167:2

court's [1] - 33:12

courtroom [4] - 105:7, 141:13, 144:5, 152:21

Courts [1] - 146:5

courts [1] - 146:15

cover [5] - 77:21, 113:7, 113:10, 113:14, 116:21

covered [3] - 96:23, 115:10, 155:6

covers [1] - 154:17

COVID [2] - 28:14, 29:3

create [2] - 139:24, 156:16

created [1] - 10:20

credit [2] - 126:21, 127:12

criminal [7] - 149:4, 149:5, 149:10, 151:10, 154:20, 166:4, 166:6

criminal-related [1] - 149:5

criteria [3] - 62:15, 62:20, 71:15

CROSS [1] - 33:14

cross [12] - 3:3, 33:10, 56:8, 69:3, 72:21, 125:2, 128:14, 132:19, 132:22, 140:3, 141:11, 141:15

cross-examination [8] - 33:10, 56:8, 69:3, 125:2, 132:19, 140:3, 141:11, 141:15

CROSS-EXAMINATION [1] - 33:14

cross-examine [1] - 128:14

crossed [2] - 137:5, 137:15

CRR [1] - 2:12

CSR [1] - 2:12

cumulative [1] - 89:9

current [5] - 98:14, 111:2, 126:16, 142:16, 143:1

curve [2] - 106:23, 106:24

custody [1] - 149:3

cuts [1] - 59:14

cutting [1] - 59:10

D

daily [1] - 63:21

damage [24] - 16:4, 16:20, 17:17, 17:20, 19:11, 19:14, 37:15, 38:5, 38:6, 38:9, 38:10, 38:12, 38:17, 38:18, 39:3, 39:5,

43:21, 74:7, 81:10, 89:9, 89:20, 89:21, 90:5, 109:11

damaged [1] - 68:22

dangerous [1] - 117:4

dangerousness [1] - 150:21

Daniel [2] - 94:19, 94:20

DARBY [1] - 3:2

Darby [12] - 4:20, 13:24, 16:8, 21:10, 31:19, 33:16, 70:2, 120:11, 128:18, 133:20, 143:18, 144:3

data [12] - 31:14, 100:14, 104:11, 158:8, 160:1, 160:7, 162:16, 162:17, 164:4, 165:23, 165:24, 166:1

date [4] - 24:1, 69:13, 73:11, 108:6

DATE [1] - 167:23

dates [1] - 129:12

DaTscan [3] - 34:7, 34:8, 34:9

daughter [1] - 28:12

daughter-in-law [1] - 28:12

day-to-day [1] - 142:20

days [3] - 9:21, 10:23, 47:10

DC [1] - 1:22

deal [1] - 113:4

dealing [1] - 113:1

death [3] - 46:10, 140:7, 140:10

death's [1] - 119:24

debilitating [2] - 86:13, 87:3

decade [1] - 109:5

decent [1] - 27:23

Deception [1] - 150:5

decide [2] - 129:16, 163:2

decided [1] - 69:21

decision [1] - 139:7

decisionmaking [8] - 36:22, 37:12, 44:16, 66:14, 66:16, 71:1, 137:19

decisions [1] - 155:9

deck [1] - 61:20

decline [16] - 15:24, 52:8, 52:13, 53:7, 56:20, 57:12, 57:21, 57:22, 57:23, 58:2, 60:13, 60:19, 61:4, 61:15, 63:8, 71:20

decreased [7] - 101:4, 101:9, 101:20, 102:11, 102:13, 107:3, 111:22

deep [1] - 34:18

deeper [2] - 17:2, 37:5

defect [1] - 65:21

defend [1] - 165:21

Defendant [1] - 4:5

defendant [20] - 120:17, 142:8, 142:20, 152:1, 153:11, 153:20, 154:25, 155:14, 155:16, 156:2, 156:17, 157:17, 158:11, 158:17, 163:8, 164:6, 164:7, 166:6, 167:15

DEFENDANT [1] - 2:1

Defendant's [1] - 59:4

defendant's [1] - 142:15

defendants [2] - 151:16, 166:4

defending [1] - 129:14

Defense [1] - 54:11

defense [24] - 4:11, 11:3, 21:18, 25:10, 54:5, 58:25, 86:2, 91:8, 99:25, 111:9, 112:13, 119:23, 120:13, 120:25, 126:20, 127:14, 129:4, 129:5, 129:21, 138:2, 144:2, 153:7, 153:9, 166:11

deficits [5] - 35:23, 36:16, 44:2, 44:4, 44:6

define [2] - 40:13, 149:16

defines [1] - 76:25

definitely [4] - 96:8, 107:23, 124:16, 125:5

definition [3] - 41:20, 159:8, 163:5

definitional [2] - 136:2, 137:3

definitionally [1] - 159:13

definitions [4] - 41:21, 43:19, 136:25, 154:23

definitive [2] - 64:6, 149:18

degeneration [1] - 96:4

degree [12] - 15:14, 25:16, 30:19, 76:22, 102:4, 102:7, 103:15, 108:22, 115:19, 134:15, 148:2, 148:6

delirious [19] - 10:24, 15:9, 23:5, 23:12, 23:16, 23:18, 23:21, 24:5, 24:6, 24:13, 24:14, 24:16, 24:25, 25:2, 29:22, 30:1, 49:16, 50:22, 132:9

delirium [88] - 9:5, 9:19, 10:10, 10:14, 10:17, 15:10, 23:5, 23:10, 23:11, 23:25, 24:8, 46:22, 46:24, 47:3, 47:7, 47:11, 47:16, 47:20, 48:1, 48:4, 48:12, 48:19, 48:20, 49:1, 49:3, 49:6, 49:8, 49:9, 49:15, 49:17, 49:21, 49:25, 50:1, 50:4, 50:7, 50:14, 50:25, 51:2, 51:3, 51:4, 51:6, 51:7, 51:9, 51:13, 51:16, 51:18, 51:20, 51:23, 51:24, 51:25, 52:6, 52:9, 52:11, 52:20, 52:23, 53:7, 53:9, 54:25, 55:5, 56:19, 57:11, 57:20, 58:1, 59:8, 59:20, 60:2, 60:5, 61:2, 61:3, 61:12, 61:15, 61:17, 118:14, 119:3, 121:16, 126:3, 130:17, 130:21, 130:23, 130:25, 131:3, 131:6, 132:5, 132:7, 135:7, 137:12

delta [1] - 29:13

demarcation [2] - 136:2

demarcations [1] - 136:24

dementia [208] - 7:5, 10:15, 15:4, 16:7, 16:25, 18:20, 20:8, 25:4, 30:14, 30:22, 37:1, 39:14, 39:16, 39:18, 40:21, 40:22, 40:25, 41:2, 41:10, 41:11, 41:13, 41:14, 41:18, 41:19, 42:8, 42:25, 43:12, 43:13, 45:7, 46:16, 51:9, 51:14, 51:15, 52:1, 52:4, 52:15, 54:25, 56:19, 56:20, 59:9, 60:13, 61:20, 62:8, 62:10, 62:11, 62:12, 62:18, 62:21, 62:22, 62:23, 63:8, 64:4, 65:5, 65:7, 65:8, 65:18, 65:19, 65:24, 66:8, 66:11, 71:4, 71:9, 71:11, 71:16, 71:21, 71:25, 72:6, 72:17, 72:22, 74:15, 76:1, 76:3, 76:9, 76:13, 76:16, 76:17, 76:22, 76:25, 77:2, 79:18, 79:19, 80:12, 80:13, 83:6, 83:7, 83:14, 83:17, 83:20,

84:24, 85:9, 85:21, 86:13, 87:2, 87:18, 87:19, 87:23, 88:1, 88:4, 88:6, 88:13, 90:18, 91:11, 91:12, 91:25, 92:1, 92:3, 92:4, 95:16, 95:20, 96:8, 96:12, 96:15, 96:19, 96:24, 96:25, 97:3, 97:12, 97:25, 98:18, 98:21, 99:4, 99:20, 107:11, 107:14, 107:21, 112:18, 112:19, 112:21, 112:22, 118:16, 118:17, 118:20, 118:21, 118:25, 119:5, 119:7, 119:9, 119:10, 119:12, 119:14, 119:21, 119:23, 119:24, 120:1, 120:2, 120:4, 120:6, 120:12, 120:19, 120:20, 120:22, 120:23, 121:10, 121:11, 121:15, 122:7, 122:9, 122:22, 122:24, 123:8, 123:11, 123:12, 123:19, 124:2, 124:5, 125:13, 125:14, 126:5, 126:7, 126:9, 134:10, 134:21, 135:5, 135:19, 136:3, 136:8, 136:11, 136:12, 136:21, 137:6, 137:9, 137:13, 137:16, 138:1, 138:17, 139:4, 140:2, 140:6, 140:10, 141:8, 141:10, 141:21, 142:12, 163:17, 166:5, 166:6, 166:7, 166:17, 166:19

dementia' [1] - 122:8

dementias [5] - 41:22, 95:23, 95:24, 96:7, 140:11

demonstrate [4] - 6:12, 6:14, 30:22, 30:25

demonstrated [1] - 132:4

demonstrates [3] - 6:13, 6:15, 101:3

demonstrating [5] - 8:20, 30:11, 32:2, 57:25, 129:1

Denney [7] - 127:5, 144:11, 144:15, 144:16, 145:1, 145:7, 160:14

DENNEY [2] - 3:6, 145:3

Denney's [2] - 127:8, 127:10

denying [1] - 161:21

Department [3] - 1:20, 95:12, 153:19

department [4] - 94:10, 95:3, 114:18, 147:13

dependent [2] - 29:20, 43:14

depicting [1] - 20:3

deposition [5] - 26:15, 26:16, 26:18, 30:17, 127:2

depositions [1] - 30:13

depression [4] - 36:11, 36:13, 154:15, 161:17

describe [11] - 5:18, 8:8, 16:15, 18:23, 25:11, 27:24, 40:9, 136:10, 136:20, 145:12, 159:6

described [12] - 10:24, 38:25, 40:21, 47:16, 47:20, 50:9, 74:16, 80:21, 90:17, 107:10, 153:22, 163:12

describes [1] - 80:23

describing [5] - 9:12, 101:13, 129:3, 138:17, 160:25

description [5] - 27:23, 60:17, 62:10, 62:11, 62:12

descriptors [1] - 138:24

designated [1] - 67:25

designed [2] - 66:6, 146:9

despite [1] - 30:14

details [1] - 14:21

detect [2] - 115:8, 116:2

detectable [1] - 115:19

detecting [1] - 19:22

Detection [2] - 149:22, 150:5

deterioration [3] - 60:1, 60:6, 60:9

determination [6] - 41:16, 111:3, 111:4, 130:1, 131:17, 163:5

determine [9] - 23:2, 41:23, 126:18, 127:13, 128:11, 129:10, 129:21, 139:13, 162:12

determine.. [2] - 127:24, 128:2

determined [2] - 42:9, 107:2

determines [1] - 103:3

determining [1] - 151:9

devastating [3] - 39:16, 39:21, 39:24

develop [5] - 35:25, 36:18, 87:5, 87:8, 87:10

developed [7] - 64:12, 66:3, 139:14, 139:15, 146:20, 147:4, 148:5

developing [11] - 10:10, 49:19, 51:23, 87:17, 87:23, 88:1, 91:4, 91:16, 92:6, 92:13, 93:2

develops [2] - 55:8, 87:21

deviating [1] - 165:12

deviation [7] - 103:10, 103:17, 103:23, 104:4, 104:12, 106:4, 106:13

deviations [4] - 103:7, 106:14, 106:16, 106:21

diagnose [6] - 41:19, 42:9, 43:12, 99:2, 135:12, 140:14

diagnosed [6] - 33:21, 36:2, 46:2, 46:16, 87:16, 142:12

diagnoses [2] - 98:14, 109:9

diagnosis [15] - 7:6, 9:13, 34:6, 41:12, 43:1, 46:8, 87:5, 99:15, 134:20, 134:24, 135:14, 140:4, 142:5, 142:8, 143:10

diagnostic [4] - 80:24, 150:25, 154:10, 159:2

die [1] - 59:1

differ [1] - 81:24

differed [1] - 100:24

difference [14] - 22:9, 22:11, 25:12, 29:16, 32:15, 32:17, 39:11, 60:2, 102:6, 103:4, 148:23, 154:4, 154:6, 155:18

differences [7] - 23:14, 60:5, 66:10, 155:19, 155:20, 155:22, 157:7

different [75] - 4:25, 11:6, 11:9, 13:10, 14:18, 16:18, 16:19, 17:11, 18:14, 19:10, 20:17, 21:11, 21:12, 22:14, 36:8, 38:24, 45:1, 58:7, 61:19, 62:24, 62:25, 64:3, 65:16, 74:5, 74:10, 74:13, 82:2, 84:1, 84:6, 85:15, 88:14, 88:15, 88:16, 88:17, 89:5, 89:8, 89:19, 89:21, 90:3, 90:5, 90:6, 92:5, 92:16, 92:20, 95:22, 95:24, 96:11, 97:1, 98:18,

102:4, 103:4, 103:7, 103:16, 103:21, 103:24, 104:8, 110:8, 110:21, 121:25, 122:2, 135:21, 135:22, 135:24, 136:9, 136:25, 137:1, 138:13, 150:17, 155:14, 155:23, 161:1, 163:16
differently [2] - 89:13, 89:18
difficulties [5] - 7:2, 137:18, 152:18, 162:22, 166:15
difficulty [15] - 37:13, 40:11, 66:9, 66:12, 67:16, 70:8, 70:18, 70:20, 73:17, 73:20, 73:22, 74:8, 74:20, 137:21, 140:20
diffuse [1] - 111:12
dinner [2] - 73:16, 73:18
direct [16] - 36:14, 46:23, 68:1, 77:21, 107:14, 108:2, 108:12, 109:25, 119:13, 120:8, 122:1, 122:11, 124:23, 124:25, 140:1, 140:6
DIRECT [2] - 4:18, 145:5
Direct [2] - 3:3, 3:7
directed [3] - 5:24, 6:7, 99:8
directly [1] - 97:18
director [1] - 147:4
Director [1] - 95:15
disability [3] - 159:17, 163:20
disagree [2] - 55:19, 124:20
disagreement [1] - 22:5
disclosed [3] - 120:8, 120:13, 123:9
discuss [2] - 46:22, 113:7
discussed [4] - 46:22, 65:17, 108:2, 130:20
discusses [1] - 80:7
disease [123] - 20:10, 21:20, 29:15, 31:5, 32:16, 32:25, 33:19, 33:22, 34:4, 34:5, 34:24, 35:2, 35:19, 35:22, 35:25, 36:2, 36:6, 36:12, 36:17, 36:25, 37:4, 37:17, 37:18, 39:10, 39:13, 39:17, 39:19, 39:22, 39:23, 40:1, 40:4, 40:6, 40:18, 40:24, 41:1, 41:15, 43:25, 44:3, 44:8, 44:11, 44:25, 45:4, 45:9, 45:11, 45:17, 45:18, 45:25, 46:3, 52:8, 52:24, 58:1, 59:22, 66:3, 66:4, 78:3, 79:17, 79:18, 80:11, 80:12, 80:13, 83:7, 83:8, 83:14, 83:16, 83:17, 83:19, 83:20, 84:16, 84:24, 85:9, 85:21, 86:14, 87:3, 87:8, 87:21, 88:4, 88:6, 88:13, 89:12, 90:19, 91:10, 91:11, 91:14, 91:23, 91:25, 92:2, 96:19, 96:24, 97:14, 97:15, 97:16, 97:19, 97:20, 97:22, 97:25, 98:9, 98:20, 98:22, 108:21, 111:1, 111:2, 112:16, 112:17, 112:19, 112:21, 112:22, 113:25, 114:6, 118:14, 119:4, 120:6, 121:19, 124:4, 126:2, 134:21, 140:1, 140:5, 141:19
diseases [10] - 18:18, 45:2, 45:6, 50:13, 51:6, 83:22, 89:15, 96:5, 97:1, 136:23
disorder [5] - 15:5, 91:19, 154:15, 162:24, 162:25
disorders [17] - 10:16, 18:16, 19:17, 36:8, 45:22, 46:5, 91:4, 91:16, 92:6,

92:9, 92:13, 93:2, 98:19, 100:18, 113:23, 116:8, 116:11
disrespect [1] - 95:6
disrupted [1] - 115:16
disruption [4] - 38:19, 38:20, 38:23
distinct [2] - 96:8, 96:24
distinction [1] - 111:12
distinguishing [2] - 41:2, 62:21
District [1] - 146:5
DISTRICT [3] - 1:1, 1:1, 1:12
disturbance [1] - 55:7
dive [1] - 147:24
dives [1] - 73:25
DIVISION [1] - 1:2
division [5] - 94:24, 95:2, 95:8, 95:9, 95:11
Division [2] - 1:20, 94:17
divisions [2] - 94:12, 94:13
Doctor [1] - 141:23
doctor [16] - 5:25, 6:2, 24:10, 33:18, 56:2, 56:3, 77:7, 94:2, 98:15, 106:12, 113:1, 127:17, 135:11, 143:7, 143:24, 148:7
doctors [2] - 133:8, 135:10
doctors' [1] - 80:20
document [4] - 61:24, 61:25, 69:15, 138:3
documented [1] - 47:3
documents [2] - 47:14, 68:7
domain [15] - 63:20, 71:15, 71:21, 71:23, 72:3, 72:10, 72:11, 74:16, 75:21, 76:7, 76:10, 76:20, 76:22, 77:4, 77:5
domains [3] - 63:17, 64:3, 65:17
done [8] - 37:13, 86:7, 105:25, 143:15, 153:24, 163:12, 163:13, 163:15
door [5] - 119:24, 132:22, 133:3, 133:9, 133:11
Dopamine [2] - 34:13, 34:16
dopamine [1] - 34:20
dopaminergic [2] - 34:10
Dorothy [1] - 142:22
dorsal [1] - 34:11
dose [1] - 28:8
dots [1] - 85:21
doubt [2] - 107:17, 107:20
down [6] - 66:7, 68:14, 85:5, 160:13, 161:3, 161:4
downward [1] - 45:20
Dr [55] - 4:20, 6:1, 6:7, 13:24, 16:8, 21:10, 21:17, 21:18, 21:25, 22:1, 31:19, 33:16, 70:2, 78:13, 78:24, 79:1, 79:4, 79:9, 79:12, 80:25, 83:11, 83:15, 100:4, 100:5, 100:6, 100:22, 100:23, 101:2, 101:8, 102:1, 102:25, 107:2, 107:9, 107:14, 107:17, 107:20, 111:19, 111:22, 120:11, 127:5, 127:8, 127:10, 128:18, 133:20, 142:5, 142:8, 142:10, 143:18, 144:3, 144:11, 144:15, 144:16, 145:1, 145:7, 160:14

drag [1] - 160:12
dramatic [3] - 14:25, 52:12, 58:2
draw [1] - 156:12
dressings [1] - 77:9
drying [1] - 31:14
due [5] - 15:23, 24:19, 41:14, 51:8, 111:1
duly [1] - 145:4
during [24] - 7:23, 8:14, 8:17, 8:18, 9:7, 10:24, 14:19, 15:9, 37:22, 46:22, 47:24, 48:4, 60:9, 129:1, 148:8, 151:12, 151:20, 152:8, 159:18, 161:11, 165:1, 165:11
duty [1] - 79:4
DX-39 [1] - 79:22
DX-42 [1] - 111:9
dying [3] - 115:15, 115:18, 115:24
dysfunction [4] - 10:13, 38:22, 81:7, 81:9

E

earliest [1] - 66:5
early [33] - 10:22, 20:10, 36:1, 44:3, 45:3, 47:5, 66:17, 79:16, 80:11, 83:18, 91:3, 91:9, 91:13, 91:16, 91:18, 91:20, 91:22, 91:24, 91:25, 92:1, 92:4, 92:5, 92:13, 93:1, 102:10, 107:10, 107:14, 107:21, 120:1, 120:18
earned [1] - 93:14
easier [3] - 54:9, 59:18, 145:2
easily [1] - 4:12
eating [1] - 81:11
ECST [1] - 165:8
ECST-R [1] - 165:8
edited [1] - 149:11
educational [1] - 147:25
EEG [4] - 23:22, 24:1, 24:3, 110:9
effects [1] - 77:10
efficiency [1] - 78:23
effort [2] - 157:13, 161:12
eight [2] - 146:17, 150:19
either [11] - 10:19, 79:2, 79:17, 80:11, 83:16, 84:10, 91:10, 92:2, 106:19, 106:24, 139:8
electrical [1] - 23:24
ELMO [2] - 64:15, 86:6
Email [4] - 1:23, 1:23, 2:5, 2:9
embedded [2] - 162:3, 162:10
emotional [1] - 162:21
employment [1] - 145:23
end [18] - 11:22, 42:8, 60:4, 76:21, 77:17, 103:20, 118:17, 119:6, 119:12, 119:24, 122:7, 123:5, 123:8, 126:6, 136:10, 136:21, 147:1, 166:15
end-stage [7] - 42:8, 118:17, 119:12, 119:24, 123:8, 136:10, 136:21
ending [1] - 122:5
energy [3] - 17:8, 81:12, 81:16
engage [1] - 156:11

engaged [1] - 13:17
engagement [5] - 157:12, 159:24, 160:5, 160:20, 162:9
entire [3] - 57:24, 60:22, 163:1
entirely [1] - 32:23
entitled [1] - 167:22
episode [19] - 10:14, 10:17, 15:11, 48:4, 52:6, 52:9, 52:11, 52:13, 52:14, 52:20, 52:22, 53:7, 56:18, 56:19, 61:2, 121:16, 130:17, 135:7, 137:11
episodes [14] - 46:23, 48:11, 49:10, 51:25, 52:16, 61:3, 61:12, 61:14, 61:17, 130:21, 130:25, 131:8, 131:11, 131:19
especially [1] - 123:2
essentially [6] - 85:15, 103:6, 112:1, 138:6, 140:16, 153:18
estimate [13] - 33:2, 33:5, 46:17, 62:24, 87:14, 99:22, 100:19, 113:22, 121:14, 135:9, 140:9, 141:6, 141:22
estimating [1] - 31:4
et [1] - 87:7
evaluate [15] - 6:4, 60:14, 63:16, 95:22, 97:4, 97:22, 98:16, 98:17, 151:3, 151:4, 151:13, 153:20, 154:25, 156:18, 160:11
evaluated [10] - 21:16, 25:9, 29:25, 100:9, 135:2, 142:10, 146:21, 151:17, 157:17, 163:8
evaluates [2] - 155:13, 155:15
evaluating [3] - 134:7, 158:18, 166:4
evaluation [25] - 5:10, 5:13, 6:9, 6:14, 6:16, 6:20, 10:2, 13:24, 14:19, 24:18, 30:9, 30:21, 117:10, 117:13, 141:9, 152:7, 152:16, 157:22, 157:23, 158:7, 158:8, 158:17, 164:5, 165:7
evaluations [10] - 15:10, 25:13, 30:15, 30:23, 118:18, 151:11, 151:25, 152:4, 157:24, 158:1
evaluator [1] - 156:22
event [1] - 127:11
events [8] - 10:20, 11:2, 65:20, 67:16, 68:18, 68:19, 138:10, 148:4
eventually [1] - 7:18
everyday [1] - 65:21
evidence [10] - 5:24, 34:20, 55:17, 56:1, 56:7, 78:2, 78:5, 127:13, 129:2, 141:22
exact [5] - 81:23, 87:13, 108:6, 121:22, 122:2
exactly [6] - 92:22, 94:13, 108:15, 116:3, 151:14, 166:11
exaggerating [8] - 15:17, 25:5, 30:5, 30:7, 32:14, 126:24, 161:21, 165:4
Exaggeration [1] - 149:23
exaggeration [3] - 139:21, 149:13, 165:24
exam [7] - 8:2, 9:12, 31:16, 31:17, 32:6, 32:8, 143:7
EXAMINATION [6] - 4:18, 33:14,

133:18, 142:3, 143:16, 145:5
examination [16] - 5:2, 8:5, 8:9, 8:18, 22:25, 25:3, 31:23, 33:10, 56:8, 69:3, 125:2, 132:19, 140:3, 141:11, 141:15, 165:2
examinations [3] - 11:3, 25:7, 25:8
examine [1] - 128:14
examined [2] - 11:1, 59:20
example [10] - 9:6, 28:21, 30:6, 69:1, 73:10, 73:11, 89:7, 154:20, 160:9, 162:4
examples [23] - 6:23, 6:25, 8:10, 8:20, 8:23, 8:25, 9:9, 25:15, 30:8, 30:9, 30:12, 30:24, 31:2, 31:21, 31:22, 32:5, 32:9, 32:10, 62:2, 62:15, 66:13, 72:25, 73:5
exams [2] - 23:16, 30:11
exclude [2] - 68:19, 126:8
excuse [1] - 134:22
Excuse [1] - 20:12
excused [1] - 144:4
executive [4] - 36:23, 44:7, 44:12, 44:14
exercise [2] - 105:23, 106:10
exercises [2] - 106:6
Exhibit [17] - 54:5, 54:11, 54:22, 58:8, 59:4, 60:20, 75:16, 79:25, 86:2, 90:20, 91:8, 99:25, 100:21, 111:6, 111:8, 111:9, 118:3
exhibit [13] - 4:15, 4:16, 4:20, 4:24, 11:12, 11:14, 25:23, 58:25, 75:12, 91:8, 112:13, 133:6, 138:21
exist [2] - 53:21, 74:7
existence [1] - 7:22
expect [21] - 6:25, 9:15, 20:23, 21:2, 22:24, 29:15, 31:6, 31:10, 32:18, 32:21, 42:7, 45:21, 50:21, 53:11, 66:23, 113:15, 113:24, 114:6, 114:8, 114:11, 123:25
expectancy [3] - 46:2, 46:12, 46:15
expectation [1] - 53:12
expected [6] - 31:5, 32:16, 108:22, 118:14, 121:19, 126:2
experience [2] - 62:3, 166:3
experiences [1] - 49:25
expert [15] - 9:13, 11:3, 21:5, 21:17, 21:18, 56:4, 56:8, 68:1, 69:20, 124:13, 124:19, 124:25, 126:1, 134:19, 143:20
expertise [2] - 67:25, 127:16
experts [5] - 22:6, 22:10, 25:10, 29:24, 143:22
expired [1] - 9:4
explain [9] - 13:7, 22:17, 22:25, 23:13, 44:14, 88:22, 89:11, 148:17, 154:4
explains [2] - 15:5, 129:25
explanation [2] - 25:4, 30:2
explanatory [1] - 75:22
explored [1] - 15:20
exploring [1] - 130:3
exponential [1] - 52:18
extend [1] - 102:15

extensive [1] - 19:3
extent [5] - 21:4, 29:18, 55:13, 67:17
extraordinarily [2] - 50:15, 66:23

F

face [2] - 26:9, 140:13
fact [12] - 5:8, 23:17, 27:8, 39:16, 50:1, 85:9, 97:24, 123:16, 131:3, 132:6, 134:9, 135:1
factor [8] - 10:9, 49:18, 50:6, 51:15, 51:20, 51:22, 131:4
factors [4] - 51:17, 60:15, 87:17, 131:1
facts [2] - 70:22, 129:10
faculty [1] - 98:4
fail [1] - 162:20
fair [8] - 94:14, 101:25, 108:7, 128:13, 129:6, 134:4, 135:21, 136:9
fairly [2] - 21:21, 21:23
faking [1] - 134:14
fall [5] - 35:17, 48:6, 63:13, 106:15, 163:4
falls [1] - 46:7
familial [1] - 74:21
familiar [6] - 53:18, 54:13, 64:6, 85:17, 85:20, 85:23
family [5] - 29:19, 138:7, 139:23, 153:12, 157:5
far [7] - 22:11, 28:12, 65:7, 103:14, 129:19, 143:13, 159:4
fatal [5] - 45:23, 45:25, 48:19, 48:20, 49:2
father [1] - 153:13
fatigue [1] - 35:20
favours [1] - 112:21
FDG [25] - 15:25, 17:10, 19:8, 19:12, 20:4, 20:13, 22:6, 22:24, 77:25, 101:20, 101:21, 109:17, 109:18, 109:23, 110:20, 110:24, 112:4, 113:10, 113:14, 113:20, 114:24, 115:4, 115:12, 135:1, 137:8
FDGs [1] - 110:10
feature [2] - 43:24, 66:5
features [3] - 35:9, 43:18, 99:2
February [1] - 135:13
federal [3] - 56:6, 146:2, 146:10
feign [1] - 159:15
fellowship [5] - 93:13, 93:14, 93:15, 93:18
felt [5] - 21:25, 22:3, 121:16, 128:25, 135:2
few [2] - 8:25, 137:23
field [1] - 149:25
fields [1] - 149:6
figure [3] - 46:4, 121:24, 140:11
figuring [1] - 46:7
fill [1] - 71:19
final [1] - 30:4
financial [5] - 66:14, 66:16, 66:18, 70:25, 137:19

findings [25] - 58:5, 59:24, 79:16, 80:10, 83:5, 83:21, 91:3, 91:9, 91:13, 91:16, 91:19, 91:20, 92:5, 92:7, 92:13, 93:1, 101:12, 111:11, 112:15, 116:22, 126:3, 157:2, 164:19

fine [1] - 42:18

finish [1] - 144:13

finished [6] - 93:6, 93:11, 93:17, 93:18, 147:14

firm [1] - 5:9

first [27] - 4:23, 7:21, 7:24, 9:13, 9:23, 15:21, 19:19, 19:22, 29:11, 33:21, 36:9, 40:3, 40:6, 40:17, 40:19, 64:12, 65:16, 68:22, 69:24, 108:25, 115:4, 146:6, 146:11, 150:19, 159:4, 163:18, 164:17

Fisher [7] - 78:13, 78:24, 79:1, 79:4, 79:12, 80:25, 112:14

Fisher's [3] - 79:9, 83:11, 83:15

fit [2] - 83:6, 83:23

five [11] - 11:14, 21:1, 46:6, 57:24, 60:9, 114:12, 114:13, 124:8, 140:5, 140:6, 140:9

five-month [2] - 114:12, 114:13

five-year [2] - 57:24, 60:9

flashing [1] - 56:4

flip [1] - 83:1

floating [1] - 138:22

fluctuate [1] - 55:9

fluid [1] - 99:6

fMRI [1] - 38:16

focus [3] - 57:14, 118:4, 155:7

focused [2] - 143:21, 149:8

focuses [1] - 154:10

focusing [2] - 21:24, 148:24

fold [4] - 56:20, 57:12, 57:21, 60:20

folder [1] - 64:25

follow [3] - 14:14, 57:24, 115:23

follow-up [1] - 57:24

followed [1] - 5:25

following [4] - 57:22, 60:7, 60:9, 167:1

follows [6] - 11:18, 26:4, 27:4, 68:20, 120:21, 145:4

Fong [2] - 55:2, 55:3

footage [1] - 10:25

FOR [3] - 1:1, 1:17, 2:1

force [1] - 160:18

foregoing [1] - 167:20

Forensic [1] - 150:4

forensic [30] - 117:13, 146:5, 146:14, 146:15, 146:22, 146:23, 147:8, 148:20, 148:24, 149:5, 149:9, 149:10, 150:20, 151:7, 154:1, 154:2, 154:5, 154:16, 155:13, 156:1, 156:15, 156:25, 157:10, 157:23, 157:24, 158:1, 158:3, 158:8, 163:13, 164:5

forensic-type [1] - 156:25

forensics [2] - 154:20, 155:5

Forest [3] - 147:2, 147:5, 147:9

forget [1] - 86:5

forgetting [1] - 73:4

form [3] - 98:7, 149:3, 159:11

formal [1] - 62:20

formally [1] - 36:2

forming [1] - 132:25

forms [1] - 96:5

forth [7] - 44:20, 75:3, 157:11, 157:13, 160:4, 160:19, 161:12

foster [1] - 156:14

foundation [1] - 56:12

four [3] - 46:16, 47:9, 93:18

fragments [1] - 74:17

free [1] - 144:4

freestanding [1] - 162:1

frequent [2] - 77:14, 111:10

frequently [2] - 40:3, 40:16

friend [1] - 73:3

front [4] - 5:9, 79:23, 117:17, 120:16

frontal [5] - 39:10, 64:4, 85:10, 88:8, 111:13

frontoparietal [1] - 101:18

frontotemporal [15] - 45:7, 95:15, 95:20, 95:23, 96:8, 96:11, 96:15, 96:19, 96:23, 97:2, 97:11, 98:21, 98:23, 99:4, 99:8

fudge [1] - 158:19

full [5] - 94:6, 146:8, 146:19, 150:20, 153:2

full-time [2] - 146:19, 150:20

fully [2] - 22:25, 76:6

function [13] - 6:22, 8:21, 17:15, 19:13, 31:21, 32:3, 32:7, 34:11, 44:7, 44:12, 44:15, 82:1, 136:14

functional [8] - 29:19, 31:12, 43:15, 121:18, 136:4, 142:12, 142:13, 164:20

functioning [2] - 141:19, 145:16

functions [3] - 36:23, 63:1, 145:19

fundamental [3] - 52:7, 57:11, 57:20

future [10] - 70:9, 91:4, 91:17, 92:6, 92:14, 93:2, 131:10, 131:19, 132:5, 132:8

G

gain [4] - 142:15, 159:10, 163:3

game [4] - 120:24, 121:2, 128:13, 129:6

ganglia [2] - 34:19, 37:8

gap [2] - 31:9, 31:10

gather [1] - 143:1

gating [1] - 108:24

gears [1] - 46:21

gender [3] - 60:11, 60:12, 60:14

general [16] - 8:23, 10:8, 29:5, 45:10, 69:9, 81:16, 85:14, 86:24, 97:9, 99:1, 115:7, 129:20, 140:11, 143:19, 146:2, 155:20

generally [1] - 114:23

generate [2] - 18:14, 44:22

generated [1] - 114:22

generating [1] - 44:20

genuine [5] - 15:23, 139:16, 160:8, 160:22, 160:24

GEORGE [1] - 1:11

given [11] - 7:15, 48:2, 118:4, 118:11, 118:12, 118:13, 119:3, 123:2, 132:2, 132:3, 135:14

glial [5] - 82:7, 82:8, 82:9, 82:12, 141:12

global [8] - 63:4, 63:5, 65:11, 71:9, 71:24, 76:20, 76:25, 77:1

glucose [3] - 17:8, 17:10, 17:14

gosh [1] - 150:3

government [9] - 21:17, 33:24, 33:25, 58:24, 100:1, 117:20, 120:10, 122:3, 167:14

GOVERNMENT [1] - 1:17

government's [1] - 126:22

Government's [9] - 54:21, 58:8, 60:20, 79:25, 90:20, 100:21, 111:6, 111:8, 118:3

gradual [1] - 136:23

graduate [1] - 147:6

grandchild [1] - 73:2

grandson [1] - 28:11

graphical [2] - 18:6, 18:7

gray [3] - 18:3, 87:7, 111:12

gray-white [1] - 111:12

great [1] - 116:20

greater [2] - 60:2, 87:23

gripe [1] - 13:6

grooming [1] - 140:19

gross [1] - 165:23

grounds [1] - 58:11

group [21] - 60:2, 60:4, 94:21, 94:22, 95:23, 98:6, 103:11, 103:14, 103:23, 103:24, 104:2, 104:14, 104:16, 104:17, 105:24, 106:1, 106:5, 106:8, 106:11, 106:17

groups [4] - 18:17, 85:5, 88:17, 103:25

gu [2] - 82:3, 82:4

guess [5] - 12:17, 68:3, 106:1, 110:18, 141:16

guide [1] - 164:3

guided [1] - 155:10

guy [2] - 133:23

guys [2] - 74:25, 125:3

gyrus [1] - 101:6

H

habits [1] - 59:1

half [6] - 8:4, 11:15, 25:25, 74:24, 106:18, 106:23

hallmark [1] - 35:9

hallucination [1] - 9:7

hand [1] - 144:17

handle [1] - 11:25

handling [1] - 66:9

HANKS [1] - 1:11

happy [1] - 26:25

hard [1] - 59:1

harder [1] - 37:13
hardly [1] - 13:7
head [5] - 78:22, 82:13, 83:13, 95:2, 95:3
headache [1] - 57:15
health [7] - 10:6, 46:11, 46:13, 150:22, 151:4, 152:17, 155:6
Healthcare [1] - 147:11
healthy [1] - 82:24
hear [3] - 72:17, 104:19, 105:19
heard [7] - 53:20, 53:23, 70:17, 104:21, 105:5, 113:13
hearing [4] - 29:21, 69:1, 70:3, 70:11
HEARING [1] - 1:9
help [10] - 69:16, 70:25, 77:13, 122:25, 123:15, 131:17, 148:12, 154:13, 156:14, 164:3
helpful [3] - 78:4, 117:12, 133:16
helping [2] - 67:17, 98:7
heterogeneity [4] - 85:2, 85:7, 88:3, 89:11
heterogenous [4] - 84:25, 85:4, 88:7, 141:12
hi [2] - 26:5, 144:16
high [4] - 30:14, 87:25, 160:10, 160:11
higher [7] - 8:20, 30:10, 30:22, 32:2, 32:7, 32:11, 51:6
highest [2] - 51:17, 87:17
highlighted [5] - 55:4, 57:10, 59:17, 59:23, 60:1
highly [10] - 57:25, 72:19, 72:23, 73:9, 73:10, 73:24, 74:1, 74:3, 74:4, 74:11
himself [1] - 165:22
hired [2] - 100:1, 146:3
his' [1] - 123:4
historically [1] - 161:8
history [8] - 5:15, 8:23, 80:17, 80:19, 145:24, 152:11, 152:16, 153:14
history-taking [1] - 152:11
hit [1] - 35:16
hobbies [1] - 63:20
holding [1] - 13:18
home [6] - 27:13, 29:20, 63:20, 74:20, 140:21, 160:18
honest [1] - 156:8
Honor [50] - 4:9, 11:10, 11:16, 25:22, 25:25, 26:23, 33:9, 33:11, 42:18, 43:2, 55:13, 56:6, 58:10, 58:13, 64:20, 67:23, 68:12, 68:13, 69:4, 69:19, 75:11, 76:12, 80:1, 104:20, 105:5, 116:18, 117:24, 120:7, 122:1, 124:9, 124:21, 125:9, 125:18, 125:21, 127:21, 128:6, 129:24, 130:10, 132:12, 132:15, 132:17, 133:15, 143:4, 143:5, 143:9, 144:1, 166:21, 166:23, 167:10, 167:11
HONORABLE [1] - 1:11
hopefully [1] - 82:24
hoping [2] - 140:7, 144:14
Hospital [2] - 78:10, 147:11

hospital [14] - 9:21, 10:23, 48:5, 51:13, 80:23, 95:4, 114:18, 137:12, 146:7, 146:9, 146:19, 146:22, 147:13, 150:9
hospitalization [16] - 9:4, 9:18, 10:4, 10:12, 10:22, 15:13, 23:9, 47:8, 47:24, 48:7, 48:9, 57:23, 60:7, 60:10, 80:21, 151:3
hospitalizations [4] - 118:13, 119:3, 126:3, 130:23
hospitalized [4] - 9:24, 47:2, 47:6, 47:10
hotel [3] - 13:17, 13:19, 14:2
hour [3] - 8:4, 74:23, 117:3
hour-and-a-half [1] - 8:4
hours [4] - 8:3, 8:4, 121:1, 133:21
Houston [8] - 2:4, 2:13, 13:13, 21:16, 78:10, 79:5, 100:24, 102:2
HOUSTON [1] - 1:2
houston [1] - 1:4
hygiene [2] - 45:15, 77:9
hypometabolism [14] - 38:8, 42:5, 81:3, 81:6, 85:10, 88:7, 101:17, 107:10, 109:21, 110:20, 114:3, 115:11, 115:13
hypothesis [1] - 116:8

I

idea [4] - 84:15, 90:9, 100:17, 160:23
identical [1] - 89:17
identification [3] - 54:2, 54:5, 64:15
identified [1] - 4:12
identify [1] - 161:20
identifying [1] - 4:15
illness [6] - 48:21, 49:4, 49:9, 50:18, 154:14
image [5] - 16:25, 83:12, 90:4, 103:2
images [4] - 18:25, 107:7, 107:8, 114:10
imagine [1] - 73:22
imaging [11] - 31:7, 31:12, 42:1, 77:20, 90:9, 110:24, 141:4, 141:7, 141:20, 164:20, 164:21
immediately [1] - 146:4
impact [6] - 76:3, 109:8, 109:9, 109:11, 136:13, 158:24
impacted [2] - 71:2, 76:1
impaired [8] - 88:12, 157:16, 159:9, 159:18, 162:19, 162:20, 162:21, 165:25
impairment [48] - 7:7, 20:11, 32:19, 40:8, 41:9, 42:10, 43:16, 43:23, 43:24, 44:7, 62:9, 62:22, 63:14, 65:10, 65:12, 67:3, 67:7, 76:5, 76:23, 76:24, 77:5, 77:8, 77:12, 81:1, 84:1, 89:25, 92:9, 108:23, 109:10, 120:18, 121:18, 121:22, 124:1, 125:12, 126:13, 126:17, 126:19, 134:15, 134:22, 134:25, 135:15, 137:11, 138:14, 139:9, 141:21, 142:16, 143:2, 166:2
impairments [4] - 29:20, 30:19, 31:13, 49:13

impeach [1] - 56:2
impeaching [1] - 132:20
implication [1] - 125:6
import [1] - 70:13
important [9] - 66:2, 103:10, 104:1, 110:23, 117:9, 156:3, 158:16, 158:20, 160:24
impossible [1] - 35:3
imprecise [1] - 32:25
impression [2] - 91:8, 111:9
impressions [2] - 21:12, 79:21
impugn [1] - 105:13
IN [1] - 1:1
in-person [1] - 8:9
inattention [1] - 55:7
incidence [1] - 10:1
incident [1] - 131:5
incidents [1] - 131:6
include [10] - 35:2, 35:20, 36:15, 44:6, 64:3, 80:9, 131:18, 152:11, 157:10, 163:17
included [4] - 154:17, 155:3, 155:5, 163:23
incompetency [2] - 128:1, 129:9
incompetent [2] - 126:19, 130:6
inconsistent [5] - 125:15, 125:17, 135:22, 163:25, 165:3
incontinence [1] - 77:14
incorporated [1] - 43:20
increase [7] - 10:15, 52:12, 52:17, 58:2, 60:8, 131:6, 132:7
increased [15] - 49:7, 50:7, 53:7, 56:19, 60:6, 66:19, 121:15, 130:13, 130:15, 130:18, 131:1, 131:4, 131:7, 131:19, 135:6
increases [4] - 52:21, 52:23, 87:19, 131:9
independence [1] - 136:5
independently [3] - 71:3, 136:6, 136:14
index [2] - 60:7, 60:10
INDEX [1] - 3:1
indicate [2] - 80:25, 107:21
indicated [1] - 119:7
indicates [3] - 17:19, 111:11, 111:17
indicating [1] - 111:10
indications [1] - 16:16
indicative [2] - 81:9, 162:8
indicator [1] - 115:3
indicators [1] - 162:10
individual [19] - 46:2, 46:7, 67:6, 71:7, 76:19, 85:6, 85:7, 103:11, 104:1, 104:2, 104:13, 104:15, 105:23, 106:5, 106:7, 106:11, 129:23, 149:11
individual's [1] - 61:15
individualized [1] - 102:20
individuals [4] - 89:13, 89:17, 90:2, 104:2
indulgence [1] - 33:12
infection [20] - 9:5, 9:18, 9:19, 27:20,

27:25, 28:14, 47:3, 47:6, 47:10, 47:12, 48:22, 49:16, 50:8, 50:19, 50:20, 50:21, 50:24, 116:7, 132:8
infections [10] - 12:23, 14:6, 27:17, 29:5, 49:24, 52:5, 131:11, 131:20, 132:1, 132:6
inflammation [5] - 49:5, 115:22, 115:25, 116:6, 116:10
inflammatory [1] - 116:9
influenced [1] - 79:13
inform [5] - 6:21, 7:4, 22:13, 61:8, 142:21
information [24] - 32:12, 33:4, 67:3, 67:8, 67:13, 70:3, 70:4, 70:5, 73:9, 73:10, 74:12, 80:19, 121:17, 121:22, 123:22, 129:2, 131:18, 143:1, 143:11, 153:8, 153:16, 154:18, 156:24, 157:7
informational [1] - 38:22
ingredients [1] - 12:10
initial [2] - 87:5, 141:9
injection [1] - 17:6
injury [1] - 149:2
inmates [6] - 146:10, 146:21, 150:13, 151:1, 151:9, 151:13
inpatient [4] - 150:22, 151:4, 152:4, 152:7
input [1] - 69:2
inquire [1] - 132:18
inside [3] - 11:24, 12:18, 32:7
insight [3] - 142:15, 153:14, 159:25
instability [1] - 35:10
instance [3] - 9:3, 39:9, 102:21
instances [1] - 113:6
institute [1] - 148:4
Institute [3] - 147:2, 147:5, 147:9
institutions [1] - 151:1
instructor [1] - 94:7
instrument [2] - 114:24, 165:7
insufficient [1] - 127:12
insular [2] - 85:11, 88:8
insurance [3] - 113:4, 113:6, 113:10
intake [1] - 152:9
intended [4] - 26:25, 105:15, 107:21, 107:23
intentional [2] - 159:11, 162:23
inter [1] - 8:17
interactions [1] - 153:11
interest [1] - 45:16
interested [2] - 45:13, 45:15
interface [1] - 54:24
interfere [3] - 30:20, 67:17, 67:21
interferes [1] - 65:21
interfering [1] - 109:20
interior [1] - 107:4
internal [1] - 93:9
Internal [2] - 53:19, 59:7
internship [4] - 93:9, 146:1, 146:3, 146:4
interplay [1] - 19:7

interpret [2] - 79:8, 132:19
interpretation [5] - 92:21, 93:4, 100:23, 109:13, 112:24
interpreted [1] - 78:9
interpreting [2] - 79:13, 101:25
interrupt [1] - 26:24
interval [1] - 32:20
interview [19] - 5:2, 7:24, 8:5, 8:11, 8:18, 8:19, 129:1, 138:6, 138:7, 138:11, 139:17, 142:22, 152:8, 152:9, 152:15, 152:17, 152:19, 153:9, 153:12
interviews [6] - 22:18, 29:12, 31:25, 32:1, 152:10, 155:15
introduced [1] - 73:3
intuitive [2] - 65:23, 72:16
investigate [2] - 15:22, 15:25
investigated [1] - 23:2
investigation [2] - 22:13, 34:1
investigative [2] - 157:1, 166:10
invests [1] - 11:23
involve [2] - 19:4, 89:19
involved [12] - 20:20, 21:4, 26:20, 34:17, 35:22, 82:22, 88:16, 89:8, 96:11, 97:18, 98:6, 100:12
involves [2] - 36:18, 36:19
IQ [5] - 160:11, 160:14, 160:22, 162:4, 162:5
irreversible [2] - 53:8, 58:3
is' [1] - 123:5
issue [20] - 23:7, 43:10, 60:12, 61:9, 67:2, 69:22, 69:24, 70:3, 70:15, 74:9, 84:22, 88:2, 108:24, 125:19, 128:8, 128:17, 129:15, 133:11, 149:12, 154:23
issued [5] - 91:14, 100:7, 100:9, 111:19, 128:13
issues [26] - 5:15, 11:20, 12:19, 14:12, 36:18, 43:15, 46:11, 46:14, 65:25, 66:1, 68:8, 68:17, 68:19, 70:2, 70:7, 70:12, 70:21, 72:7, 102:22, 130:7, 130:8, 136:7, 146:16, 150:23, 154:14, 154:15
itself [15] - 11:23, 21:20, 36:9, 45:8, 48:19, 49:1, 51:7, 51:25, 67:12, 85:2, 89:12, 90:1, 118:19, 165:14

J

James [1] - 2:6
January [2] - 33:22, 146:14
Jason [1] - 2:2
jloonam@jonesday.com [1] - 2:9
job [2] - 137:21, 153:24
jobs [1] - 71:2
John [1] - 64:11
Jones [5] - 2:2, 2:7, 5:4, 14:3, 35:13
journal [10] - 53:18, 53:21, 54:13, 54:15, 54:19, 54:20, 55:16, 56:4, 85:17
journals [1] - 54:17
JR [1] - 1:11

Judge [7] - 53:15, 54:2, 57:16, 57:18, 59:1, 75:7, 121:2
JUDGE [1] - 1:12
judgment [9] - 61:8, 61:14, 63:23, 63:24, 64:1, 66:7, 66:10, 66:12, 142:21
July [26] - 11:1, 11:4, 11:5, 11:21, 15:6, 15:9, 15:13, 22:15, 22:18, 23:13, 23:16, 24:5, 24:13, 24:15, 24:16, 24:25, 25:2, 25:8, 25:16, 28:20, 29:8, 29:9, 30:25, 108:5, 108:6, 109:4
June [10] - 9:22, 10:4, 10:19, 10:23, 22:20, 47:5, 47:25, 48:7, 79:22, 130:24
junior [2] - 95:8, 160:10
Justice [2] - 1:20, 153:19
jvornado@jonesday.com [1] - 2:5

K

Kathleen [4] - 2:12, 167:20, 167:23, 167:24
Kathryn [1] - 2:6
keep [5] - 82:24, 86:21, 86:23, 133:10, 152:3
keeping [1] - 77:9
keeps [2] - 76:13, 76:16
Keneally [1] - 2:6
kept [4] - 28:11, 28:12, 151:19, 151:22
kid [1] - 160:15
kill [1] - 11:25
kind [13] - 11:23, 13:1, 18:8, 41:9, 62:2, 73:6, 100:11, 115:3, 147:24, 151:6, 160:18, 161:18, 162:23
kit [1] - 152:1
kkeneally@jonesday.com [1] - 2:9
knowing [1] - 135:8
knowledge [4] - 48:12, 79:1, 145:17, 154:24
known [1] - 7:24

L

lacking [1] - 6:24
lagging [1] - 115:3
Lai [2] - 142:5, 142:10
Lai's [1] - 142:8
Lancet [3] - 54:13, 54:17, 54:19
Langston [1] - 1:18
language [3] - 64:4, 96:1, 133:17
large [6] - 19:16, 22:9, 134:6, 155:7, 158:10, 161:5
largely [3] - 8:24, 20:21, 112:24
larger [2] - 21:11, 59:12
last [8] - 9:4, 31:15, 31:22, 32:1, 63:21, 123:2, 123:3, 133:21
late [2] - 47:5, 134:10
late-stage [1] - 134:10
laughter [1] - 117:6
law [10] - 5:9, 28:12, 68:20, 149:1,

<p>149:3, 154:19, 154:21, 154:22, 155:5, 155:6</p> <p>lawyer [1] - 117:5</p> <p>lay [2] - 56:12, 130:7</p> <p>lead [14] - 22:14, 37:12, 38:25, 39:2, 40:24, 41:1, 50:25, 52:5, 66:25, 89:10, 89:22, 132:3, 159:1</p> <p>leading [5] - 51:15, 51:20, 51:21, 109:10, 136:15</p> <p>leads [2] - 39:13, 49:6</p> <p>learn [2] - 94:14, 127:9</p> <p>learned [12] - 37:22, 56:7, 72:19, 72:23, 73:9, 73:10, 73:24, 74:1, 74:3, 74:4, 74:12, 162:6</p> <p>learning [3] - 7:19, 36:16, 36:19</p> <p>least [6] - 9:9, 78:1, 87:1, 88:10, 99:22, 113:20</p> <p>leave [1] - 25:1</p> <p>leaves [2] - 123:1, 123:11</p> <p>Lee [1] - 1:18</p> <p>lee.f.langston@usdoj.gov [1] - 1:23</p> <p>left [1] - 23:11</p> <p>legal [9] - 26:20, 68:8, 130:8, 146:16, 147:16, 151:17, 152:20, 154:25, 155:11</p> <p>legal-related [1] - 147:16</p> <p>less [14] - 16:24, 17:18, 18:2, 28:5, 45:12, 45:15, 70:9, 101:24, 112:18, 114:24, 159:9</p> <p>letter [2] - 13:4, 44:21</p> <p>letters [1] - 44:19</p> <p>letting [2] - 128:3</p> <p>level [26] - 8:20, 30:14, 32:2, 47:22, 63:13, 71:20, 71:21, 71:23, 77:1, 77:5, 85:6, 89:25, 92:8, 94:7, 121:17, 121:22, 126:17, 131:1, 134:22, 139:13, 141:18, 142:12, 142:16, 143:1, 155:8</p> <p>Lewy [14] - 37:1, 79:18, 80:12, 83:6, 83:19, 90:18, 91:11, 91:25, 92:3, 92:4, 98:18, 98:19, 112:18, 112:22</p> <p>license [1] - 146:13</p> <p>life [4] - 42:11, 46:2, 46:12, 46:15</p> <p>light [1] - 110:19</p> <p>likelihood [2] - 27:19, 108:20</p> <p>likely [17] - 25:5, 30:2, 37:17, 46:10, 68:24, 75:20, 87:23, 99:16, 112:18, 115:8, 124:3, 125:8, 126:6, 132:3, 134:19, 134:20, 134:24</p> <p>limited [1] - 51:2</p> <p>limits [1] - 164:24</p> <p>line [2] - 119:2, 120:11</p> <p>linear [1] - 52:17</p> <p>link [1] - 6:9</p> <p>list [4] - 12:11, 12:17, 44:20</p> <p>listed [3] - 61:19, 62:9, 127:2</p> <p>lists [1] - 65:16</p> <p>lit [1] - 17:22</p> <p>literature [4] - 53:13, 61:11, 104:18, 161:7</p>	<p>lives [1] - 45:24</p> <p>living [2] - 63:21, 145:7</p> <p>lobe [3] - 39:10, 81:4, 83:21</p> <p>lobes [3] - 101:18, 111:13, 164:22</p> <p>localized [2] - 88:21, 89:1</p> <p>locate [1] - 80:6</p> <p>located [1] - 12:7</p> <p>lockdown [1] - 86:5</p> <p>locked [1] - 152:13</p> <p>long-term [2] - 59:8, 59:20</p> <p>look [32] - 16:2, 17:1, 21:12, 39:10, 41:17, 42:6, 58:6, 58:18, 58:19, 64:18, 65:15, 74:17, 80:6, 83:14, 85:1, 89:16, 96:13, 103:22, 119:20, 122:14, 123:6, 123:7, 124:6, 137:8, 157:16, 159:18, 163:1, 163:24, 164:2, 164:22, 165:1, 165:2</p> <p>looked [10] - 21:7, 52:20, 61:5, 61:8, 61:16, 71:5, 78:12, 96:14, 100:11, 165:21</p> <p>looking [18] - 16:12, 21:11, 29:14, 41:22, 42:6, 78:5, 79:15, 102:19, 104:17, 107:7, 107:8, 114:10, 124:24, 124:25, 125:1, 135:8, 152:7, 161:25</p> <p>looks [6] - 16:2, 19:12, 19:15, 20:22, 23:23, 96:18</p> <p>Loonam [5] - 2:6, 3:3, 3:4, 132:16, 133:10</p> <p>LOONAM [95] - 33:11, 33:15, 42:15, 42:18, 42:20, 43:7, 43:11, 53:15, 53:17, 54:1, 54:4, 54:9, 54:12, 55:18, 56:6, 56:17, 56:24, 57:6, 57:9, 57:16, 57:18, 57:19, 58:25, 59:3, 64:14, 64:25, 65:3, 68:12, 68:15, 68:16, 69:19, 70:1, 75:7, 75:11, 75:14, 75:15, 76:18, 77:17, 77:19, 80:1, 80:3, 80:5, 86:9, 86:11, 90:22, 91:1, 104:19, 104:25, 105:4, 105:12, 105:15, 105:18, 105:20, 105:21, 116:18, 116:20, 116:25, 117:4, 117:7, 117:20, 117:23, 118:1, 118:2, 120:7, 121:2, 121:4, 121:25, 122:23, 123:1, 123:17, 124:9, 124:21, 125:9, 125:18, 125:21, 125:24, 125:25, 127:20, 128:6, 128:16, 128:21, 128:23, 129:24, 130:10, 130:11, 132:11, 133:25, 136:15, 142:1, 142:4, 143:4, 143:9, 144:2, 167:11, 167:15</p> <p>loss [21] - 34:9, 34:13, 34:14, 34:15, 34:16, 34:20, 36:3, 43:18, 44:5, 65:20, 72:7, 72:14, 72:18, 72:19, 74:15, 74:16, 99:13, 99:15, 111:12, 136:4</p> <p>loved [1] - 74:21</p> <p>lower [1] - 26:7</p> <p>lunch [1] - 4:21</p> <p>Lutheran [1] - 148:3</p>	<p>M.D.s [1] - 95:8</p> <p>Magnani [4] - 1:19, 3:3, 3:4, 3:5</p> <p>MAGNANI [38] - 4:9, 4:14, 4:19, 11:10, 13:23, 25:22, 26:23, 28:18, 33:8, 42:12, 43:2, 55:10, 55:12, 55:20, 55:25, 58:10, 58:23, 64:19, 64:24, 67:23, 69:4, 76:12, 77:18, 117:21, 120:15, 127:15, 132:15, 133:4, 133:13, 133:15, 133:19, 134:2, 136:18, 141:23, 143:5, 143:17, 143:24, 144:1</p> <p>main [3] - 13:14, 15:1, 149:10</p> <p>maintained [1] - 66:10</p> <p>major [1] - 154:14</p> <p>majority [1] - 98:20</p> <p>male [2] - 46:12, 146:10</p> <p>malingering [1] - 159:19</p> <p>malingering [14] - 126:23, 127:7, 127:12, 130:2, 139:21, 149:13, 149:16, 149:19, 159:5, 159:8, 159:21, 162:13, 163:4, 163:6</p> <p>Malingering [1] - 149:23</p> <p>man [1] - 29:11</p> <p>manager [2] - 75:4, 167:6</p> <p>MANAGER [3] - 4:6, 54:8, 75:9</p> <p>manifest [3] - 44:3, 45:8, 90:1</p> <p>manifesting [1] - 55:6</p> <p>manifests [1] - 89:12</p> <p>map [1] - 37:24</p> <p>mapping [1] - 89:5</p> <p>March [21] - 9:25, 16:4, 20:5, 20:13, 20:15, 20:22, 22:6, 32:20, 47:2, 48:15, 48:16, 77:23, 78:6, 80:7, 99:24, 100:6, 101:25, 114:3, 114:9, 130:24</p> <p>mark [2] - 54:1, 54:11</p> <p>marked [6] - 54:5, 54:21, 65:20, 68:18, 86:1, 101:20</p> <p>markedly [7] - 11:6, 14:18, 101:4, 101:8, 102:11, 102:13, 112:20</p> <p>marker [6] - 17:17, 19:14, 19:17, 19:18, 50:2, 51:25</p> <p>marking [4] - 11:12, 25:25, 52:2, 64:14</p> <p>mask [5] - 26:7, 27:11, 27:18, 144:24, 145:2</p> <p>masks [4] - 27:5, 27:6, 27:13, 27:16</p> <p>Master's [1] - 148:6</p> <p>match [1] - 141:3</p> <p>material [14] - 17:6, 72:19, 72:23, 73:24, 74:2, 74:3, 86:18, 86:19, 86:20, 86:21, 86:22, 86:24, 157:1, 166:10</p> <p>matter [5] - 46:8, 73:25, 111:12, 111:23, 167:22</p> <p>matters [1] - 149:5</p> <p>maximum [1] - 146:9</p> <p>MCI [10] - 9:13, 120:6, 120:17, 120:22, 121:14, 126:5, 136:2, 141:7, 141:10, 166:5</p> <p>mean [45] - 11:5, 14:16, 17:9, 24:10, 24:16, 24:17, 30:5, 31:15, 40:15, 50:25, 51:1, 56:12, 64:17, 68:4, 69:6,</p>
M		
M.D [1] - 3:2		

69:8, 69:11, 71:10, 74:15, 74:19, 78:19, 87:22, 88:15, 93:2, 96:13, 99:19, 104:7, 104:9, 104:17, 105:17, 116:3, 120:7, 121:23, 129:6, 133:5, 134:6, 134:11, 135:17, 137:6, 138:5, 139:11, 140:25, 149:20, 166:6, 166:18

meaning [1] - 45:19

meaningful [3] - 155:10, 165:15, 165:18

means [8] - 35:4, 63:7, 66:22, 67:12, 106:22, 120:22, 159:7, 165:15

meant [2] - 93:5, 95:6

measure [10] - 17:15, 18:12, 19:10, 63:4, 65:11, 76:25, 100:12, 135:24, 145:15, 145:19

measurements [1] - 100:10

measures [12] - 19:8, 19:9, 32:24, 157:10, 159:23, 159:24, 159:25, 161:16, 162:10, 163:17, 164:3, 165:9

mechanical [1] - 2:15

Medical [13] - 53:22, 53:23, 146:2, 146:8, 146:25, 147:15, 147:18, 150:8, 150:9, 150:11, 150:12, 151:2, 155:3

medical [25] - 5:15, 6:17, 8:23, 8:24, 10:19, 12:19, 14:12, 23:7, 48:21, 49:4, 49:9, 54:17, 80:17, 93:6, 127:17, 131:16, 143:21, 146:7, 146:9, 146:12, 146:19, 148:9, 159:15

medical-surgical-psychiatric [1] - 146:9

Medicine [2] - 53:19, 59:7

medicine [5] - 28:4, 48:2, 78:10, 93:9

meeting [2] - 13:18, 26:8

meets [1] - 163:5

member [3] - 138:8, 149:21, 157:6

members [2] - 98:4, 153:13

Memorial [2] - 147:10, 147:11

memories [1] - 68:21

memory [64] - 5:6, 5:21, 5:23, 6:4, 6:7, 6:10, 6:14, 6:18, 6:20, 36:16, 36:19, 36:22, 40:2, 40:5, 40:10, 40:12, 40:13, 40:16, 43:18, 43:23, 44:5, 44:6, 62:25, 63:19, 65:18, 65:19, 65:20, 65:25, 66:4, 67:1, 67:6, 67:9, 67:11, 68:17, 68:19, 70:2, 70:6, 70:7, 70:18, 70:19, 72:7, 72:10, 72:11, 72:14, 72:18, 72:19, 74:14, 74:15, 74:16, 89:7, 89:9, 89:22, 98:2, 98:5, 98:17, 99:13, 99:15, 108:9, 153:1, 164:23, 166:15

Memory [1] - 147:12

men [1] - 46:15

mental [6] - 16:25, 55:6, 150:22, 151:4, 152:17, 155:6

mention [2] - 84:6, 84:7

mentioned [10] - 6:6, 6:18, 7:9, 9:9, 12:20, 31:14, 36:14, 43:23, 84:12, 132:22

met [3] - 5:4, 14:17, 29:11

metabolic [7] - 18:12, 19:20, 19:21, 101:4, 101:9, 102:12, 102:13

metabolically [1] - 17:16

metabolism [1] - 16:2

Methodist [6] - 11:22, 21:16, 78:10, 79:5, 100:25, 102:2

methods [1] - 156:22

metric [1] - 138:12

mid-60s [1] - 87:14

might [12] - 6:16, 6:19, 10:18, 58:24, 68:10, 74:19, 90:5, 140:3, 152:14, 164:1, 166:22

mild [94] - 7:1, 7:7, 20:11, 20:21, 21:3, 21:25, 29:17, 31:6, 31:8, 32:18, 32:19, 41:9, 62:9, 62:10, 62:21, 62:22, 63:2, 65:8, 65:10, 65:12, 65:18, 65:19, 65:23, 65:24, 66:8, 66:11, 70:6, 76:5, 76:9, 76:13, 76:15, 76:17, 76:23, 79:16, 80:10, 80:25, 91:9, 91:21, 91:22, 92:8, 101:16, 101:17, 102:8, 102:12, 102:14, 112:15, 112:16, 120:6, 120:17, 120:22, 120:23, 121:9, 121:15, 122:8, 122:22, 123:11, 124:1, 124:2, 124:5, 124:15, 125:5, 125:12, 125:13, 134:25, 135:5, 135:14, 135:18, 136:10, 136:20, 137:9, 137:10, 137:13, 137:16, 138:16, 138:17, 138:25, 139:3, 139:8, 139:9, 141:8, 141:20, 141:21, 164:20, 166:4, 166:5, 166:6, 166:7, 166:14, 166:16, 166:17, 166:19

military [2] - 159:14

Miller [4] - 2:12, 167:20, 167:23, 167:24

mind [3] - 66:6, 120:10, 152:3

mindset [1] - 156:4

minimal [3] - 22:4, 31:8, 32:21

minimizing [1] - 161:22

ministry [1] - 148:3

minute [3] - 11:15, 26:7, 147:23

minutes [9] - 11:14, 25:24, 25:25, 74:25, 124:8, 133:14, 144:9

mispronounce [2] - 81:7, 82:3

mispronunciations [1] - 95:19

missing [1] - 123:20

Missouri [1] - 147:12

mistake [2] - 91:17, 92:18

mitigation [1] - 150:23

moan [1] - 13:6

moderate [58] - 62:11, 62:21, 63:3, 65:8, 65:20, 65:25, 66:8, 66:12, 67:1, 67:6, 67:11, 68:17, 70:2, 70:7, 70:20, 71:4, 71:11, 72:6, 72:7, 72:9, 72:12, 72:17, 72:18, 72:22, 76:15, 76:17, 76:24, 77:8, 101:3, 101:8, 111:10, 118:20, 118:21, 119:9, 119:10, 119:14, 119:16, 119:21, 120:2, 120:4, 120:11, 120:12, 120:20, 122:9, 122:24, 123:12, 123:18, 124:17, 125:7, 125:14, 126:8, 126:10, 136:10, 139:9, 140:15, 140:22, 166:16

Moderna [1] - 28:9

moment [5] - 33:12, 46:21, 53:15, 117:16, 117:24

money [1] - 159:17

month [3] - 49:21, 114:12, 114:13

months [6] - 21:1, 48:17, 73:21, 100:7, 146:6, 146:11

morning [3] - 167:3, 167:7, 167:17

Morris [2] - 64:7, 64:11

mortality [2] - 46:9, 49:8

most [24] - 4:12, 25:4, 29:12, 29:20, 32:18, 43:24, 54:17, 56:13, 66:5, 68:22, 70:7, 75:19, 81:18, 83:20, 85:16, 110:25, 111:12, 118:18, 134:20, 134:24, 151:11, 153:23, 157:4, 164:23

mostly [5] - 7:1, 82:6, 143:20, 149:8, 155:7

mother [1] - 153:13

motivated [2] - 45:12, 45:14

motivation [2] - 45:12, 165:21

motor [14] - 34:17, 34:21, 34:22, 34:24, 34:25, 35:2, 35:9, 35:19, 36:15, 36:25, 37:2, 37:7, 37:9, 96:2

move [4] - 71:4, 72:6, 75:12, 128:10

moved [2] - 93:8, 104:24

moving [1] - 35:4

MR [140] - 4:9, 4:14, 4:19, 11:10, 13:23, 25:22, 26:23, 28:18, 33:8, 33:11, 33:15, 42:12, 42:15, 42:18, 42:20, 43:2, 43:7, 43:11, 53:15, 53:17, 54:1, 54:4, 54:9, 54:12, 55:10, 55:12, 55:18, 55:20, 55:25, 56:6, 56:17, 56:24, 57:6, 57:9, 57:16, 57:18, 57:19, 58:10, 58:23, 58:25, 59:3, 64:14, 64:19, 64:24, 64:25, 65:3, 67:23, 68:12, 68:15, 68:16, 69:4, 69:19, 70:1, 75:7, 75:11, 75:14, 75:15, 76:12, 76:18, 77:17, 77:18, 77:19, 80:1, 80:3, 80:5, 86:9, 86:11, 90:22, 91:1, 104:19, 104:25, 105:4, 105:12, 105:15, 105:18, 105:20, 105:21, 116:18, 116:20, 116:25, 117:4, 117:7, 117:20, 117:21, 117:23, 118:1, 118:2, 120:7, 120:15, 121:2, 121:4, 121:25, 122:23, 123:1, 123:17, 124:9, 124:21, 125:9, 125:18, 125:21, 125:24, 125:25, 127:15, 127:20, 128:6, 128:16, 128:21, 128:23, 129:24, 130:10, 130:11, 132:11, 132:15, 133:4, 133:13, 133:15, 133:19, 133:25, 134:2, 136:15, 136:18, 141:23, 142:1, 142:4, 143:4, 143:5, 143:9, 143:17, 143:24, 144:1, 144:2, 144:11, 144:23, 145:1, 145:6, 166:21, 167:10, 167:11, 167:14, 167:15

MRI [15] - 19:8, 19:15, 100:16, 103:9, 106:6, 109:17, 109:22, 110:24, 114:23, 115:3, 115:5, 115:9, 115:20, 164:21

MRI's [1] - 116:1

MRIs [1] - 115:14

multi [1] - 37:14

<p>multi-tasking [1] - 37:14</p> <p>multiple [11] - 46:23, 52:16, 102:22, 116:6, 116:12, 122:13, 131:8, 157:10, 161:4, 165:11</p> <p>must [1] - 157:10</p>	<p>147:5, 148:22, 149:9, 149:22</p> <p>Neuropsychology [2] - 150:4</p> <p>neuroradiologist [4] - 21:19, 100:2, 114:14, 114:16</p> <p>neuroradiologists [2] - 42:22, 114:17</p> <p>neuroreader [1] - 106:6</p> <p>Neuroreader [1] - 100:15</p> <p>never [4] - 14:21, 27:7, 55:14, 58:12</p> <p>nevertheless [2] - 34:3, 69:25</p> <p>New [1] - 2:8</p> <p>next [3] - 19:25, 109:16, 144:9</p> <p>nice [1] - 26:5</p> <p>night [1] - 167:17</p> <p>NO [1] - 1:3</p> <p>non [7] - 34:25, 35:19, 36:15, 36:25, 37:2, 44:6, 135:11</p> <p>non-Baylor [1] - 135:11</p> <p>non-memory [1] - 44:6</p> <p>non-motor [5] - 34:25, 35:19, 36:15, 36:25, 37:2</p> <p>none [1] - 65:13</p> <p>nonsensical [4] - 14:21, 25:18, 28:24, 29:24</p> <p>nonspecific [1] - 35:21</p> <p>normal [19] - 9:14, 18:3, 18:4, 20:24, 20:25, 41:5, 41:8, 50:20, 63:1, 83:13, 113:22, 113:25, 114:6, 114:7, 134:14, 134:16, 139:8, 164:24, 165:9</p> <p>normalize [1] - 60:10</p> <p>normally [2] - 81:13, 83:23</p> <p>northern [1] - 13:13</p> <p>nose [1] - 35:15</p> <p>note [3] - 59:1, 96:14, 131:10</p> <p>notes [2] - 80:20, 102:22</p> <p>nothing [6] - 105:4, 105:12, 119:8, 132:12, 143:9, 144:2</p> <p>notion [1] - 159:19</p> <p>November [1] - 31:24</p> <p>NOVEMBER [2] - 1:6, 4:2</p> <p>nuance [1] - 90:13</p> <p>nuclear [2] - 21:17, 78:9</p> <p>nuclei [1] - 107:4</p> <p>nucleus [1] - 101:21</p> <p>number [27] - 16:24, 36:7, 37:3, 38:2, 45:1, 46:18, 46:19, 47:19, 52:25, 57:1, 57:3, 57:5, 57:6, 63:5, 71:9, 71:24, 81:24, 81:25, 82:18, 82:20, 85:14, 98:19, 103:7, 110:7, 138:11, 139:7, 139:10</p> <p>numbers [8] - 4:12, 18:8, 44:18, 63:4, 71:8, 73:4, 139:6, 139:13</p> <p>numerous [4] - 85:11, 88:9, 95:11, 163:15</p> <p>nursing [1] - 74:19</p> <p>NY [1] - 2:8</p>	<p>55:10, 55:24, 55:25, 57:7, 58:10, 67:23, 68:3, 69:4, 69:5, 69:6, 76:12, 124:13, 125:23, 127:15, 128:4, 128:9, 133:16, 133:25, 136:15, 136:16</p> <p>objective [7] - 32:24, 78:2, 155:14, 157:2, 157:7, 164:3, 166:1</p> <p>objectively [1] - 156:18</p> <p>observable [1] - 114:3</p> <p>observation [2] - 111:15, 150:25</p> <p>observe [1] - 142:20</p> <p>observed [2] - 88:12, 102:1</p> <p>observes [1] - 102:5</p> <p>obtain [4] - 7:19, 156:24, 159:10, 159:11</p> <p>obtained [2] - 20:5, 148:2</p> <p>obtaining [2] - 108:13, 108:17</p> <p>obvious [3] - 19:19, 163:2, 163:3</p> <p>obviously [1] - 152:12</p> <p>occasional [1] - 150:23</p> <p>occipital [3] - 83:21, 85:11, 88:8</p> <p>occur [4] - 36:9, 51:10, 109:18, 156:6</p> <p>occurred [1] - 5:3</p> <p>occurs [1] - 23:6</p> <p>October [17] - 25:9, 25:12, 25:14, 28:19, 29:7, 29:10, 29:12, 29:22, 30:1, 30:25, 142:9, 142:11, 157:20, 163:9, 164:6, 164:14, 165:7</p> <p>OF [2] - 1:1, 1:3</p> <p>offer [1] - 127:23</p> <p>offering [2] - 128:2, 129:8</p> <p>office [2] - 153:6, 163:16</p> <p>offsetting [2] - 115:21, 115:25</p> <p>often [8] - 13:1, 25:20, 39:13, 40:19, 48:19, 49:1, 66:17, 103:19</p> <p>oftentimes [2] - 153:9, 153:12</p> <p>old [1] - 59:1</p> <p>older [4] - 46:9, 54:25, 59:21, 66:20</p> <p>olfactory [1] - 35:23</p> <p>once [8] - 53:6, 53:9, 72:21, 108:24, 157:20, 164:6</p> <p>one [101] - 7:23, 8:10, 10:2, 11:11, 11:24, 12:10, 12:15, 12:20, 13:13, 15:3, 20:6, 27:18, 27:20, 28:20, 30:18, 31:5, 35:11, 35:15, 36:3, 37:5, 38:5, 38:6, 38:10, 38:14, 39:3, 39:5, 39:9, 40:19, 47:22, 49:14, 51:17, 52:20, 52:22, 53:15, 54:9, 54:17, 55:15, 55:22, 57:14, 58:23, 61:1, 61:17, 63:6, 63:9, 63:15, 66:19, 70:23, 71:9, 75:11, 85:1, 85:23, 87:17, 89:20, 90:9, 90:14, 91:3, 91:16, 92:5, 92:13, 93:1, 94:20, 95:7, 95:9, 96:15, 97:7, 97:24, 98:4, 99:19, 109:4, 113:23, 114:9, 114:10, 115:18, 117:16, 117:24, 122:4, 124:16, 127:22, 131:5, 136:11, 138:20, 138:22, 139:2, 139:3, 139:10, 139:16, 141:4, 143:6, 143:13, 143:14, 150:5, 155:23, 157:7, 159:4, 161:5</p> <p>one's [1] - 137:22</p> <p>one-to-one [5] - 90:9, 90:14, 138:20,</p>
<p style="text-align: center;">N</p>		
<p>name [6] - 78:15, 78:20, 86:22, 86:23, 112:7, 160:14</p> <p>names [1] - 129:13</p> <p>natural [6] - 29:15, 119:4, 120:5, 123:3, 124:4, 126:2</p> <p>nature [2] - 152:25, 166:9</p> <p>NE [1] - 1:21</p> <p>necessarily [7] - 38:22, 49:17, 71:10, 120:22, 139:11, 156:20, 166:18</p> <p>necessary [2] - 111:4, 129:4</p> <p>need [17] - 56:12, 56:13, 56:14, 58:6, 70:24, 71:18, 74:25, 104:3, 104:10, 104:11, 106:12, 116:21, 150:21, 151:4, 160:11, 167:8, 167:12</p> <p>needing [3] - 137:20, 140:16, 140:18</p> <p>needs [4] - 58:18, 58:22, 75:3, 76:10</p> <p>negative [1] - 149:13</p> <p>Negative [2] - 149:23, 150:3</p> <p>networks [1] - 89:6</p> <p>neural [1] - 77:20</p> <p>neuritic [1] - 111:11</p> <p>neuroanatomy [2] - 145:17, 147:7</p> <p>neurocognitive [1] - 10:13</p> <p>neurodegeneration [7] - 10:21, 17:21, 22:22, 41:7, 43:21, 78:5, 134:13</p> <p>neurodegenerative [13] - 15:4, 19:17, 46:5, 78:3, 79:17, 80:11, 91:10, 91:14, 91:19, 91:22, 92:2, 112:16, 116:8</p> <p>neuroimaging [15] - 32:17, 32:18, 32:24, 41:23, 43:20, 84:23, 85:20, 88:3, 88:5, 88:20, 118:15, 119:4, 126:3, 143:21, 164:19</p> <p>Neurol [1] - 54:13</p> <p>neurological [5] - 15:24, 18:16, 18:18, 80:17, 100:18</p> <p>neurologists [2] - 42:21, 94:21</p> <p>Neurology [2] - 94:17, 95:12</p> <p>neurology [3] - 94:10, 97:9, 147:13</p> <p>neuron [2] - 34:20, 37:25</p> <p>neuronal [6] - 34:11, 38:19, 38:20, 38:22, 81:6</p> <p>neurons [16] - 34:16, 34:17, 81:8, 81:11, 81:19, 81:22, 82:1, 82:15, 82:19, 82:20, 82:21, 82:24, 109:20, 115:15, 115:24, 141:12</p> <p>neuropathology [2] - 145:18, 147:7</p> <p>neuropsychological [6] - 9:7, 127:6, 146:23, 147:7, 153:2, 160:7</p> <p>neuropsychologist [7] - 145:8, 145:10, 145:13, 145:14, 145:25, 147:12, 154:3</p> <p>neuropsychologists [1] - 98:7</p> <p>neuropsychology [6] - 146:16, 146:20,</p>	<p style="text-align: center;">O</p> <p>Obenour [2] - 6:1, 6:7</p> <p>objection [24] - 42:12, 42:14, 43:2,</p>	

139:3, 141:4
ones [3] - 11:24, 12:22, 74:21
onset [1] - 87:11
open [3] - 123:1, 123:11, 152:13
opened [3] - 132:22, 133:3, 133:9
opening [1] - 133:11
operating [1] - 30:13
opine [3] - 69:20, 69:21, 119:1
opined [1] - 120:8
opinion [30] - 6:21, 9:13, 30:4, 32:13, 42:23, 67:24, 83:10, 83:11, 83:15, 92:10, 97:12, 120:17, 121:5, 121:7, 121:8, 123:8, 127:23, 128:2, 128:13, 128:17, 130:5, 132:21, 132:25, 134:19, 141:16, 164:7, 164:10, 164:11, 164:13, 164:16
opinions [6] - 21:5, 21:7, 21:19, 21:21, 58:12, 131:16
opportunity [1] - 10:25
opposed [2] - 41:16, 157:16
opposite [1] - 161:22
optimal [1] - 160:20
order [9] - 18:13, 71:18, 86:21, 88:22, 113:2, 113:17, 129:13, 142:20, 159:10
ordered [7] - 15:25, 16:9, 16:11, 110:5, 110:7, 112:6, 112:7
ordering [1] - 113:20
orders [1] - 114:21
organizing [1] - 137:22
orientation [2] - 62:25, 63:19
original [7] - 11:13, 20:4, 84:10, 88:2, 100:8, 128:18, 128:20
originally [1] - 148:2
otherwise [1] - 74:22
ought [1] - 28:5
outlined [1] - 155:20
outside [6] - 31:16, 31:17, 31:23, 32:6, 32:13
outweighed [1] - 58:14
overall [7] - 25:11, 102:8, 102:10, 102:14, 139:7, 139:12, 139:13
overlap [3] - 37:19, 96:2, 154:7
overruled [4] - 57:7, 124:14, 128:5, 128:9
overruling [1] - 125:22
overview [1] - 8:23
own [4] - 21:19, 100:1, 133:16, 166:3

P

p.m [5] - 1:5, 4:3, 167:18
page [8] - 78:19, 80:6, 83:1, 83:2, 118:3, 118:8, 118:9, 126:1
pamphlet [1] - 56:8
paper [2] - 56:1, 107:22
papers [8] - 42:24, 43:4, 84:17, 84:19, 84:20, 84:21, 97:24, 149:11
paragraph [12] - 80:7, 80:9, 80:16, 83:3, 84:7, 118:4, 118:11, 118:23, 119:1, 126:15, 126:21, 128:24

parietal [3] - 81:4, 85:11, 88:8
Parkinson's [64] - 10:17, 33:19, 33:21, 34:4, 34:5, 34:24, 35:2, 35:19, 35:22, 35:25, 36:2, 36:6, 36:12, 36:15, 36:17, 36:25, 37:2, 37:4, 37:17, 39:13, 39:17, 39:19, 39:22, 39:25, 40:4, 40:7, 40:17, 49:12, 79:18, 80:13, 83:7, 83:17, 83:19, 84:23, 85:9, 85:21, 86:14, 87:3, 87:8, 87:21, 88:3, 88:5, 88:6, 88:13, 90:18, 91:11, 91:25, 96:3, 96:18, 96:24, 97:14, 97:15, 97:16, 97:18, 97:20, 97:22, 97:25, 99:16, 99:17, 111:2, 112:18, 112:22, 135:12, 135:14
part [12] - 68:4, 78:1, 82:19, 89:25, 97:4, 97:23, 99:14, 114:14, 151:8, 152:10, 155:2, 158:10
participants [1] - 152:21
particular [5] - 9:15, 26:1, 27:20, 149:17, 157:4
particularly [6] - 10:22, 84:25, 88:6, 112:17, 164:21, 166:8
partner [1] - 139:18
parts [7] - 17:23, 17:24, 38:13, 74:5, 74:10, 84:6
party [1] - 79:2
passion [1] - 74:1
past [6] - 6:6, 46:24, 70:10, 110:18, 137:16, 145:25
patent [1] - 99:3
path [1] - 148:5
pathologies [1] - 96:11
pathology [2] - 145:20, 153:2
patient [38] - 16:25, 20:10, 37:4, 41:13, 45:10, 45:24, 51:10, 53:9, 62:16, 63:7, 68:24, 74:19, 83:13, 89:20, 89:21, 99:1, 103:15, 106:15, 117:10, 123:25, 134:7, 138:7, 138:12, 139:18, 139:23, 142:10, 154:13, 155:24, 155:25, 156:1, 156:2, 156:5, 156:6, 156:7, 156:11, 157:5, 158:11, 158:17
patient's [4] - 73:11, 75:24, 76:3, 138:7
patients [37] - 10:16, 18:21, 19:17, 20:8, 36:12, 36:17, 37:17, 40:7, 40:9, 44:4, 44:12, 45:5, 50:5, 50:6, 51:12, 63:13, 85:8, 87:4, 87:10, 88:15, 88:17, 94:3, 95:22, 95:24, 96:21, 97:2, 97:4, 97:20, 97:22, 98:19, 98:20, 99:21, 113:1, 113:2, 117:12, 121:14, 130:16
pattern [9] - 20:20, 21:21, 83:6, 83:23, 83:25, 84:15, 90:18, 107:10, 112:19
patterns [1] - 96:17
paused [1] - 26:21
paying [1] - 113:5
PD [1] - 88:5
people [21] - 21:12, 27:15, 27:20, 28:2, 41:5, 51:5, 66:17, 73:6, 75:2, 87:8, 90:5, 95:4, 95:10, 99:19, 135:5, 135:23, 136:20, 143:18, 166:7, 166:19
percent [7] - 87:4, 106:17, 106:18, 106:23, 121:14, 135:5, 151:22

percentage [7] - 81:21, 81:23, 82:11, 82:14, 82:15, 121:20, 152:5
percentages [1] - 135:8
percentiles [1] - 106:15
perception [1] - 153:11
perfect [1] - 166:25
perform [6] - 30:10, 146:22, 151:25, 157:9, 157:22, 163:22
performance [9] - 8:8, 22:18, 63:17, 161:5, 161:10, 161:11, 161:25, 162:3, 165:9
performed [3] - 16:11, 100:10, 162:8
performing [10] - 31:16, 31:17, 32:11, 146:5, 146:15, 150:20, 151:7, 151:8, 160:4
performs [2] - 158:12, 159:25
period [12] - 49:21, 55:8, 57:24, 60:4, 60:9, 114:12, 114:13, 130:21, 131:12, 135:4, 152:7, 152:10
periodical [1] - 56:7
persist [1] - 15:12
persisting [1] - 57:23
person [21] - 7:21, 8:9, 14:17, 50:20, 64:12, 66:23, 67:12, 70:5, 70:14, 76:6, 76:10, 77:12, 86:15, 136:6, 137:15, 158:25, 159:25, 160:3, 162:19, 166:7, 166:17
person's [6] - 42:10, 50:12, 90:10, 153:14, 161:11, 163:25
personal [7] - 63:20, 75:21, 76:4, 76:10, 77:9, 77:13, 149:2
personally [1] - 143:3
persons [7] - 35:24, 52:8, 54:25, 57:25, 59:8, 66:20, 100:18
pertaining [5] - 146:16, 152:15, 152:17, 153:10, 164:23
pervasive [1] - 43:24
PET [50] - 15:25, 16:1, 16:6, 16:21, 17:11, 19:8, 19:12, 20:4, 20:13, 21:8, 21:13, 21:16, 22:7, 22:16, 22:24, 29:16, 38:16, 39:9, 77:24, 77:25, 78:1, 78:6, 83:16, 92:7, 99:5, 100:6, 100:10, 108:1, 109:8, 109:19, 109:23, 110:20, 110:24, 111:7, 111:25, 112:2, 112:4, 112:6, 112:20, 113:21, 113:25, 114:22, 114:24, 115:4, 115:7, 115:12, 115:13, 134:15, 135:1, 137:8
PETs [5] - 20:24, 109:17, 113:10, 113:14, 114:20
Ph.D [2] - 3:6, 145:3
phenomenon [1] - 68:20
phone [1] - 73:4
physically [1] - 11:24
picture [2] - 18:5, 18:8
piece [2] - 56:1, 61:10
pieces [1] - 129:2
place [2] - 13:15, 166:23
places [4] - 9:10, 84:8, 122:13, 129:13
plaintiff [1] - 156:3
plan [3] - 116:17, 156:21, 163:19

planning [1] - 116:16
plans [1] - 152:21
plaque [3] - 99:9, 111:15, 111:17
plaques [2] - 42:5, 111:11
plausibility [1] - 120:1
plausible [1] - 126:4
play [2] - 11:11, 60:12
played [3] - 11:18, 26:4, 27:4
playing [1] - 120:25
plenty [1] - 116:19
point [14] - 6:6, 11:10, 18:8, 24:7, 24:10, 35:15, 42:3, 50:16, 72:22, 109:4, 116:22, 120:10, 162:14, 166:21
pointed [1] - 7:9
pointing [3] - 72:16, 85:14, 129:1
points [1] - 139:7
Poniso [15] - 21:17, 21:25, 100:4, 100:5, 100:6, 101:2, 101:8, 102:1, 102:25, 107:2, 107:9, 107:20, 111:7, 111:19, 111:22
Ponisio's [4] - 100:22, 100:23, 107:14, 107:17
population [5] - 103:8, 103:16, 104:8, 106:17, 152:13
portion [4] - 8:19, 60:1, 138:10, 143:6
position [1] - 126:22
positions [1] - 95:5
positive [7] - 47:14, 99:5, 111:10, 111:15, 111:17, 111:25, 112:1
possibilities [2] - 15:20, 134:7
possibility [8] - 15:8, 15:16, 118:24, 119:1, 122:24, 123:2, 123:12, 123:18
possible [20] - 15:15, 23:10, 41:25, 91:3, 91:15, 92:12, 93:1, 99:12, 109:9, 118:15, 120:18, 134:3, 134:5, 134:9, 134:10, 134:11, 134:12, 134:18, 135:17, 140:23
possibly [2] - 125:6, 156:8
posterior [1] - 107:5
postural [2] - 35:10, 35:18
potential [8] - 15:20, 23:2, 120:18, 139:20, 150:22, 151:2, 153:1, 166:12
potentially [5] - 10:13, 52:3, 90:2, 137:23, 141:7
pounded [1] - 149:24
practice [8] - 18:20, 19:1, 97:6, 113:9, 113:19, 114:15, 117:8, 117:9
practicing [1] - 94:2
precautions [1] - 29:3
precuneus [2] - 101:6, 107:5
predominant [1] - 66:5
preexisting [1] - 51:15
prepared [2] - 13:4, 127:18
presence [3] - 49:17, 51:7, 121:16
present [12] - 4:5, 13:24, 40:7, 67:18, 83:21, 90:6, 91:13, 95:24, 96:1, 96:2, 99:21, 163:3
presentation [10] - 14:25, 15:23, 22:15, 23:3, 25:12, 28:19, 29:7, 29:13, 139:16, 164:1

presentations [1] - 165:1
presented [2] - 25:18, 140:13
presenting [1] - 15:6
preserve [1] - 125:19
pretty [6] - 12:15, 14:25, 28:6, 35:21, 138:15, 155:7
prevent [2] - 28:14, 122:21
preventing [1] - 29:5
preventive [2] - 28:4
previewed [1] - 116:22
previous [1] - 124:7
previously [2] - 15:18, 69:24
primarily [1] - 86:15
primary [3] - 5:24, 6:2, 99:19
principles [2] - 148:25, 155:11
prisoners [1] - 146:2
Prisons [3] - 147:19, 150:8, 150:13
private [1] - 147:15
probable [1] - 42:1
probative [1] - 58:14
problem [17] - 39:20, 63:25, 64:1, 64:23, 65:2, 66:7, 66:12, 66:24, 67:2, 67:10, 67:11, 67:13, 70:6, 70:10, 70:19, 89:22, 159:15
problem-solving [2] - 66:7, 66:12
problems [29] - 5:7, 5:18, 6:12, 7:2, 19:23, 25:19, 35:23, 40:2, 40:10, 40:16, 40:20, 44:13, 62:16, 62:25, 66:9, 67:1, 67:6, 70:20, 90:11, 95:25, 96:1, 96:2, 135:25, 136:5, 136:13, 138:8, 163:21, 164:24
procedure [3] - 10:7, 10:8, 10:11
proceed [8] - 4:8, 11:17, 57:8, 75:13, 127:14, 144:21, 151:21, 164:12
proceedings [3] - 2:15, 152:20, 167:21
Proceedings [2] - 75:8, 124:10
process [5] - 37:22, 38:23, 152:23, 159:11, 162:24
processes [3] - 38:24, 41:4, 44:23
processing [1] - 70:21
produced [1] - 2:16
product [1] - 100:15
profession [5] - 135:23, 136:20, 139:15, 148:15, 159:6
professional [1] - 164:11
Professional [1] - 148:18
professor [6] - 94:1, 94:4, 94:5, 94:6
proffer [1] - 64:24
program [2] - 147:5, 147:6
progress [10] - 7:3, 41:6, 41:8, 121:14, 121:20, 124:3, 124:5, 135:5, 136:23, 137:13
progressed [8] - 15:5, 22:2, 119:5, 119:14, 122:8, 123:11, 126:4, 135:18
progression [39] - 10:15, 10:18, 15:4, 16:7, 20:21, 21:3, 21:25, 22:4, 25:3, 29:17, 31:6, 31:11, 32:22, 45:21, 52:10, 52:17, 52:23, 53:10, 56:18, 56:20, 65:15, 113:23, 114:2, 114:3, 114:5, 114:8, 118:14, 120:6, 121:13,

123:3, 124:2, 126:12, 130:13, 130:18, 131:2, 131:4, 131:7, 135:3, 141:8
progressive [1] - 45:19
project [1] - 37:24
projecting [1] - 34:19
projects [2] - 38:2, 97:19
prologue [1] - 110:18
prompting [1] - 76:10
pronounce [1] - 101:5
pronounced [1] - 111:13
proper [5] - 157:12, 159:24, 160:4, 162:9, 165:21
properly [2] - 11:25, 160:4
proposition [2] - 56:3, 84:5
prosecution [1] - 25:10
prostate [2] - 12:23, 14:7
protect [1] - 165:16
provide [6] - 56:9, 57:4, 57:6, 59:25, 122:20, 131:16
provided [2] - 100:11, 119:23
provider [4] - 14:7, 155:24, 156:1, 156:10
provides [1] - 34:19
providing [2] - 103:17, 154:11
PSP [1] - 96:3
psychiatric [3] - 36:10, 146:9, 163:21
psychiatrists [1] - 146:24
psychological [5] - 148:25, 155:11, 158:7, 162:21, 164:5
psychologist [8] - 145:15, 154:1, 154:3, 155:13, 155:15, 160:10, 162:5
psychologists [4] - 146:23, 163:13, 163:14, 163:15
Psychology [2] - 148:11, 148:18
psychology [19] - 146:3, 146:13, 146:15, 147:6, 148:6, 148:7, 148:20, 148:24, 149:1, 149:4, 149:5, 154:5, 154:8, 154:9, 154:16, 154:18, 154:24, 155:4
psychotherapy [1] - 154:11
PTSD [1] - 154:15
publication [1] - 88:10
publications [1] - 149:7
published [10] - 53:22, 86:18, 86:19, 87:2, 88:24, 149:11, 149:12, 149:17, 149:25, 150:2
pull [4] - 16:8, 111:5, 124:7, 128:21
pulled [1] - 133:6
pure [1] - 81:14
purpose [3] - 6:4, 6:13, 13:18
purposeful [1] - 92:19
purposes [1] - 116:17
push [1] - 75:5
put [10] - 28:9, 64:11, 64:15, 64:23, 90:16, 90:24, 91:7, 100:14, 131:23, 132:24
putting [11] - 11:22, 75:16, 95:18, 134:18, 135:10, 140:12, 157:11, 157:12, 160:4, 160:19, 161:12

<p style="text-align: center;">Q</p> <p>qualified [1] - 127:25</p> <p>qualitative [3] - 101:3, 101:13, 101:14</p> <p>quantitative [9] - 100:10, 100:11, 100:14, 100:19, 101:10, 102:25, 107:1, 114:11, 164:25</p> <p>questionable [1] - 65:9</p> <p>questionnaire [4] - 161:17, 161:18, 161:19</p> <p>questionnaires [1] - 161:20</p> <p>questions [20] - 5:14, 8:13, 8:15, 8:17, 11:7, 14:20, 33:8, 68:6, 75:12, 107:13, 108:12, 109:25, 129:12, 129:17, 129:23, 138:9, 141:24, 143:4, 154:25, 165:11</p> <p>quicker [1] - 54:10</p> <p>quickly [2] - 11:25, 23:6</p> <p>quite [2] - 62:6, 115:23</p> <p>quote [2] - 80:13, 80:15</p> <p>quoted [1] - 92:16</p> <p>quotes [1] - 122:2</p>	<p>114:19</p> <p>reads [1] - 59:25</p> <p>ready [3] - 4:8, 75:13, 144:22</p> <p>real [1] - 31:2</p> <p>real-world [1] - 31:2</p> <p>really [25] - 28:25, 29:20, 30:7, 30:9, 31:3, 35:4, 37:22, 37:23, 45:11, 89:2, 89:14, 98:5, 101:10, 104:13, 104:16, 105:23, 106:1, 109:12, 120:5, 121:12, 154:7, 154:10, 155:9, 162:19</p> <p>reason [15] - 25:5, 27:15, 43:17, 49:14, 58:4, 60:16, 66:19, 79:9, 79:12, 79:14, 107:17, 107:20, 110:13, 115:18, 129:25</p> <p>reasonable [4] - 119:3, 122:7, 123:10, 135:18</p> <p>reasonableness [1] - 119:25</p> <p>reasonably [2] - 161:12, 165:9</p> <p>reasons [1] - 37:3</p> <p>recent [12] - 22:2, 32:18, 65:20, 67:16, 68:18, 68:21, 68:23, 118:13, 118:18, 119:7, 138:9, 161:8</p> <p>recently [1] - 73:2</p> <p>recessed [2] - 75:8, 124:10</p> <p>recognize [2] - 65:4, 86:2</p> <p>recognizing [5] - 73:1, 73:6, 74:20, 140:20, 156:19</p> <p>recollection [2] - 9:11, 78:18</p> <p>recommend [1] - 23:20</p> <p>recommended [5] - 16:10, 23:22, 110:7, 110:9, 110:16</p> <p>reconstruct [1] - 166:11</p> <p>record [5] - 120:13, 124:22, 132:2, 153:7, 167:21</p> <p>recorded [5] - 2:15, 29:12, 31:25, 32:1, 58:5</p> <p>records [16] - 6:6, 6:17, 7:9, 7:14, 7:16, 7:18, 7:22, 7:25, 8:24, 80:21, 80:23, 153:5, 153:7, 153:8, 157:3</p> <p>recovered [1] - 53:9</p> <p>recross [1] - 142:6</p> <p>Recross [2] - 3:4, 141:25</p> <p>recurring [1] - 52:5</p> <p>REDCROSS [1] - 142:3</p> <p>REDCROSS-EXAMINATION [1] - 142:3</p> <p>redirect [2] - 132:13, 132:23</p> <p>ReDirect [2] - 3:4, 3:5</p> <p>REDIRECT [2] - 133:18, 143:16</p> <p>reduce [2] - 27:19, 39:6</p> <p>reduced [1] - 16:22</p> <p>reducing [1] - 38:15</p> <p>reduction [1] - 16:24</p> <p>redundancy [1] - 74:11</p> <p>redundant [1] - 74:5</p> <p>refer [2] - 41:13, 77:4</p> <p>reference [1] - 84:4</p> <p>references [1] - 85:13</p> <p>referred [3] - 99:8, 99:13, 151:2</p> <p>referring [17] - 43:13, 44:22, 50:11,</p>	<p>59:6, 65:5, 70:24, 72:9, 72:25, 75:24, 85:3, 88:14, 89:14, 106:25, 116:4, 120:5, 138:4</p> <p>refers [4] - 47:13, 71:25, 77:1, 85:15</p> <p>reflect [2] - 38:18, 126:17</p> <p>reflected [1] - 8:24</p> <p>reflecting [1] - 49:3</p> <p>reflective [2] - 89:2, 160:7</p> <p>reflects [2] - 38:17, 49:9</p> <p>refresh [1] - 78:17</p> <p>regarding [6] - 6:20, 21:7, 68:8, 69:12, 84:21, 121:17</p> <p>regardless [1] - 165:20</p> <p>region [4] - 17:20, 18:2, 89:1, 102:7</p> <p>regions [10] - 84:1, 85:12, 85:15, 85:16, 88:9, 88:11, 88:12, 88:22, 89:5, 102:22</p> <p>regular [3] - 151:6, 155:3, 162:4</p> <p>relate [2] - 43:15, 145:19</p> <p>related [22] - 5:6, 14:22, 23:7, 25:3, 27:22, 28:24, 32:15, 37:5, 37:14, 40:12, 45:22, 108:21, 136:4, 136:5, 145:16, 147:16, 149:5, 152:19, 152:22, 154:21, 166:4</p> <p>relationship [2] - 156:11, 156:16</p> <p>relationships [1] - 145:22</p> <p>relatively [2] - 48:12, 130:21</p> <p>relevant [6] - 67:3, 67:7, 67:13, 131:22, 157:3, 166:13</p> <p>reliable [1] - 141:6</p> <p>rely [2] - 157:5, 165:24</p> <p>relying [1] - 61:10</p> <p>remain [2] - 74:17, 144:4</p> <p>remained [1] - 91:15</p> <p>remains [4] - 60:3, 91:3, 92:12, 92:25</p> <p>remember [23] - 4:20, 14:21, 16:9, 26:7, 26:9, 26:10, 26:12, 48:8, 63:21, 67:20, 68:25, 73:13, 73:15, 78:22, 107:16, 108:6, 108:14, 108:15, 110:1, 128:22, 129:12, 138:20, 138:24</p> <p>remembering [8] - 67:16, 70:8, 70:9, 70:10, 73:17, 73:20, 73:23, 140:20</p> <p>remote [1] - 68:19</p> <p>remove [2] - 144:23, 145:1</p> <p>reoccurring [5] - 49:10, 49:20, 50:14, 51:3, 51:24</p> <p>repeated [3] - 122:4, 130:25, 131:6</p> <p>repeating [1] - 76:16</p> <p>rephrase [4] - 42:17, 43:5, 136:17, 158:15</p> <p>report [67] - 69:20, 69:24, 78:12, 79:15, 79:23, 80:6, 80:10, 80:14, 81:1, 82:25, 83:5, 84:4, 84:9, 84:10, 84:11, 90:16, 91:14, 91:15, 91:18, 92:8, 92:17, 92:21, 100:7, 100:8, 100:9, 100:22, 102:24, 111:19, 111:20, 112:10, 114:22, 117:16, 119:11, 119:13, 119:17, 119:18, 119:20, 119:22, 120:5, 120:9, 120:16, 120:20, 120:21, 122:12, 122:14, 122:15, 124:13,</p>
<p style="text-align: center;">R</p> <p>radio [5] - 17:4, 17:5, 17:10, 17:12, 17:13</p> <p>radioactive [1] - 17:6</p> <p>radiologist [11] - 21:15, 21:16, 21:18, 78:15, 79:7, 91:2, 92:11, 92:14, 92:22, 92:25, 100:24</p> <p>radiologist's [1] - 93:3</p> <p>radiology [2] - 91:18, 92:17</p> <p>raise [1] - 144:16</p> <p>range [11] - 20:11, 30:14, 32:19, 32:20, 46:8, 76:14, 76:17, 125:13, 125:14, 134:6</p> <p>rank [1] - 62:13</p> <p>rapid [1] - 15:3</p> <p>rapidly [1] - 15:5</p> <p>rate [16] - 8:14, 10:15, 12:3, 52:12, 52:17, 52:23, 53:6, 56:18, 57:22, 58:2, 60:6, 60:8, 60:21, 61:3, 61:15, 151:21</p> <p>rated [1] - 63:1</p> <p>rates [1] - 60:12</p> <p>rather [3] - 102:20, 115:15, 155:10</p> <p>rating [5] - 62:18, 70:23, 77:1, 138:1, 139:12</p> <p>ratings [2] - 30:23, 65:6</p> <p>ratio [1] - 60:4</p> <p>reach [9] - 69:22, 130:5, 142:14, 142:24, 142:25, 143:3, 143:8, 143:11, 143:18</p> <p>reached [2] - 69:24, 121:5</p> <p>reaching [1] - 143:22</p> <p>read [16] - 21:5, 48:7, 55:16, 55:18, 58:12, 60:18, 60:22, 60:25, 78:9, 78:16, 79:5, 112:10, 122:1, 127:8, 129:25, 140:18</p> <p>readily [1] - 29:3</p> <p>reading [5] - 22:12, 56:1, 79:7, 102:2,</p>		

124:19, 125:1, 125:17, 126:1, 127:2, 127:8, 127:20, 128:18, 128:20, 130:12, 131:14, 131:16, 132:20, 132:24, 135:16, 142:24, 153:17, 161:16, 161:21, 161:22
reported [6] - 36:4, 85:10, 88:7, 88:16, 104:18, 115:9
REPORTER [1] - 2:11
REPORTER'S [1] - 167:19
reporting [2] - 29:19, 139:23
reports [9] - 31:12, 48:5, 56:5, 84:20, 96:20, 114:19, 140:17, 142:11, 142:13
represent [3] - 24:21, 69:16, 107:10
representation [2] - 18:6, 18:7
representations [1] - 24:18
represented [3] - 21:25, 74:10, 74:13
represents [1] - 160:23
reputable [1] - 54:15
request [1] - 108:10
requested [2] - 7:18, 78:1
require [2] - 77:8, 77:13
research [11] - 63:10, 63:11, 89:3, 89:4, 97:19, 98:6, 98:8, 98:9, 98:10, 110:21, 134:8
researcher [1] - 134:1
reserve [4] - 50:10, 50:11, 50:15, 51:3
reset [1] - 126:14
residency [4] - 93:8, 93:10, 93:11, 93:19
residual [1] - 23:11
respect [12] - 61:1, 61:3, 63:13, 72:3, 74:11, 74:15, 85:4, 89:4, 101:12, 120:2, 121:8, 122:9
respected [2] - 54:17, 54:19
respectfully [7] - 124:13, 124:20, 125:16, 128:4, 129:15, 130:8, 133:12
respond [4] - 5:22, 11:7, 14:12, 69:14
responding [3] - 6:11, 8:15, 8:17
response [3] - 118:6, 120:14, 149:13
Response [2] - 149:23, 150:3
responses [2] - 28:24, 29:24
responsibilities [1] - 98:3
responsible [1] - 94:22
rest [2] - 75:6, 120:21
restate [1] - 67:5
resting [1] - 35:6
restroom [1] - 140:19
result [7] - 37:8, 41:7, 52:6, 52:12, 65:24, 115:12, 155:21
resulted [3] - 57:11, 57:20, 58:1
resulting [1] - 39:23
results [8] - 8:16, 24:17, 31:1, 109:7, 110:14, 110:16, 111:24, 118:15
retain [1] - 73:6
retained [5] - 72:20, 72:23, 73:9, 79:1, 153:18
retaining [3] - 70:3, 70:12, 70:18
reticent [1] - 165:11
retired [1] - 146:25
reversible [4] - 23:7, 45:17, 45:18,

53:11
review [7] - 7:17, 10:25, 86:17, 86:18, 86:20, 86:24, 111:20
reviewed [8] - 7:20, 8:25, 11:4, 80:19, 100:6, 111:19, 124:12, 124:13
Reynolds [2] - 30:16, 30:17
Ribot's [1] - 68:20
riddled [1] - 42:4
rights [1] - 165:17
rigidity [1] - 35:8
rise [2] - 4:6, 75:9
risk [25] - 10:9, 49:18, 50:6, 50:7, 51:6, 51:15, 51:17, 51:20, 51:22, 52:21, 87:17, 87:23, 87:25, 130:13, 130:15, 130:18, 131:1, 131:3, 131:6, 131:9, 131:10, 131:19, 131:25, 132:7
RMR [1] - 2:12
RMR,CRR [1] - 167:24
road [1] - 165:12
ROBERT [3] - 1:6, 3:6, 145:3
Robert [1] - 144:11
role [5] - 42:21, 42:22, 143:20, 156:10
roles [2] - 150:17, 155:23
Ronald [2] - 78:13, 78:24
Room [2] - 1:21, 2:12
room [8] - 5:4, 5:9, 14:4, 31:16, 31:17, 31:23, 32:6, 32:8
rotate [2] - 150:24, 151:5
rough [3] - 46:17, 121:13, 140:9
RPR [1] - 167:24
rule [8] - 56:6, 81:16, 96:14, 118:20, 119:13, 120:2, 121:9, 122:21
ruled [4] - 119:23, 120:11, 120:12, 123:17
rules [3] - 56:9, 119:9, 122:23
running [2] - 107:1, 151:23
runs [1] - 81:14
Rusk [1] - 2:12
RYAN [1] - 3:2

S

safe [1] - 28:12
sample [1] - 85:2
sanity [2] - 150:21, 154:23
saw [6] - 5:17, 11:9, 15:7, 22:17, 31:15, 167:7
scale [10] - 61:18, 62:5, 62:18, 62:23, 63:1, 65:6, 66:1, 66:2, 70:23, 138:1
scales [2] - 62:6, 161:19
scalpel [1] - 117:1
scams [1] - 66:18
scan [58] - 16:1, 16:4, 16:6, 16:9, 16:10, 16:21, 19:12, 20:4, 20:15, 20:16, 22:16, 41:17, 41:20, 42:6, 42:23, 77:24, 77:25, 78:6, 78:9, 78:17, 79:13, 79:15, 80:7, 81:3, 89:16, 92:7, 99:5, 99:24, 99:25, 100:6, 100:24, 102:1, 102:19, 106:7, 108:2, 108:10, 108:13, 108:17, 108:18, 109:17, 109:22,

110:1, 110:6, 112:4, 112:6, 112:7, 112:8, 112:11, 112:19, 112:20, 112:25, 113:25, 115:8, 115:9, 134:15, 135:1, 137:8
scans [26] - 17:5, 17:11, 20:13, 20:14, 21:8, 21:13, 21:17, 22:2, 22:4, 22:7, 29:16, 38:17, 39:9, 42:21, 79:5, 79:7, 89:17, 89:24, 96:13, 96:15, 100:9, 109:12, 113:2, 113:5, 114:9, 123:6
schedule [1] - 167:2
schizophrenia [1] - 154:15
school [4] - 93:6, 157:2, 160:10
science [1] - 133:23
scientific [7] - 61:25, 84:14, 103:18, 104:10, 104:14, 104:16, 134:1
scientifically [2] - 104:9, 105:22
scientist [1] - 106:12
sclerosis [2] - 116:6, 116:13
scope [5] - 67:24, 69:17, 127:16, 143:7, 143:10
score [4] - 76:20, 103:6, 103:19, 160:21
scored [1] - 76:20
scores [1] - 160:21
scoring [1] - 30:14
Scott [1] - 2:2
scratch [1] - 96:21
screen [9] - 21:10, 59:10, 59:12, 59:14, 64:20, 64:23, 75:16, 75:19, 86:7
seated [3] - 4:7, 75:10, 124:11
second [9] - 15:8, 23:1, 23:4, 55:23, 57:14, 119:2, 127:22, 141:16
second-guess [1] - 141:16
secondary [4] - 159:10, 159:11, 163:2, 163:3
seconds [3] - 11:14, 11:15, 25:24
section [2] - 57:10, 119:15
sections [1] - 55:4
security [1] - 146:10
Security [1] - 159:16
see [71] - 10:18, 16:3, 16:5, 16:23, 17:13, 18:20, 19:1, 20:7, 20:14, 20:19, 20:23, 20:25, 22:25, 23:21, 26:5, 31:22, 32:1, 35:17, 37:25, 38:24, 39:3, 39:5, 39:7, 40:6, 42:22, 47:22, 54:6, 54:22, 54:23, 55:1, 59:5, 59:9, 59:11, 59:12, 59:15, 59:16, 64:19, 64:23, 75:17, 75:19, 75:20, 78:2, 83:8, 83:9, 83:24, 84:1, 90:20, 91:5, 94:3, 96:21, 97:2, 97:4, 99:14, 101:11, 103:23, 112:15, 113:15, 115:4, 115:5, 115:6, 115:11, 115:13, 116:10, 119:15, 121:20, 122:13, 137:9, 137:15, 137:17, 140:21, 167:17
seeing [14] - 6:1, 19:5, 23:14, 26:7, 29:18, 32:16, 38:8, 43:3, 48:8, 51:12, 99:20, 116:21, 117:12, 152:14
seem [1] - 29:23
sees [1] - 101:8
self [2] - 75:22, 140:19
self-care [1] - 140:19

self-explanatory [1] - 75:22
seminars [1] - 155:6
send [1] - 114:19
sense [6] - 5:15, 11:8, 14:14, 138:8, 145:23, 147:25
sensitive [3] - 19:13, 19:22, 114:24
sensitivity [1] - 113:16
sentence [4] - 118:19, 118:21, 119:2, 119:8
sentenced [1] - 151:1
sentencing [1] - 150:22
separate [2] - 74:9, 99:2
sepsis [13] - 9:18, 9:23, 9:25, 10:1, 10:4, 10:12, 22:20, 22:21, 47:3, 47:7, 47:13, 48:24, 50:25
September [12] - 24:3, 24:10, 24:11, 24:23, 47:9, 48:4, 48:8, 48:15, 48:16, 50:23, 100:7, 130:24
serendipity [1] - 99:7
serious [5] - 9:17, 48:21, 48:22, 49:16, 50:20
Seroquel [1] - 48:3
service [4] - 12:14, 14:7, 146:21, 159:14
services [1] - 146:12
session [1] - 152:9
SESSION [1] - 1:10
set [3] - 103:2, 103:5, 166:10
sets [1] - 70:22
setting [15] - 42:24, 49:23, 51:13, 107:11, 149:10, 149:14, 152:12, 152:13, 152:14, 155:12, 155:25, 156:2, 156:25, 157:4, 157:10
settings [2] - 146:7, 163:16
several [4] - 7:19, 89:8, 102:24, 147:3
severe [43] - 34:9, 34:14, 34:15, 39:20, 42:7, 49:5, 62:12, 62:22, 63:3, 65:7, 72:7, 72:14, 72:18, 74:14, 74:15, 74:16, 75:19, 76:15, 76:24, 77:12, 118:17, 119:6, 119:12, 119:23, 122:7, 122:22, 123:5, 123:8, 124:16, 125:5, 126:6, 126:19, 136:10, 138:13, 138:16, 138:17, 138:25, 139:1, 139:4, 139:9, 140:15, 140:22
severely [1] - 162:19
severities [1] - 61:20
severity [17] - 21:22, 32:19, 43:14, 49:3, 49:9, 50:17, 62:8, 62:17, 71:23, 72:2, 72:10, 76:1, 89:10, 126:24, 135:1, 141:3
share [1] - 13:1
sharing [1] - 86:8
shelf [2] - 162:1, 162:5
shift [1] - 46:21
shifting [1] - 104:23
short [6] - 8:1, 48:12, 55:8, 130:21, 131:12, 154:12
short-term [1] - 154:12
shoulders [1] - 35:16
show [14] - 16:16, 25:23, 26:25, 27:1, 32:6, 32:10, 43:20, 54:21, 55:4, 57:10,

78:17, 89:25, 100:21, 132:23
showed [4] - 8:1, 34:9, 34:13, 81:3
showing [5] - 18:1, 21:9, 59:4, 86:1, 138:3
shows [3] - 42:23, 81:6, 163:19
sic [1] - 73:18
side [11] - 13:13, 59:14, 75:18, 98:10, 98:11, 106:19, 106:24, 146:19, 146:22, 156:9, 161:22
sign [3] - 48:20, 52:4, 69:14
signal [1] - 104:22
signaling [2] - 105:8, 105:11
signed [1] - 69:14
significance [2] - 103:21, 106:22
significant [10] - 16:5, 18:11, 25:19, 32:22, 57:25, 103:4, 106:21, 107:3, 113:24, 164:1
significantly [3] - 60:2, 68:22, 158:24
silent [2] - 120:1, 122:8
similar [7] - 5:12, 20:20, 22:1, 37:8, 46:19, 100:17, 112:19
similarities [1] - 66:9
simply [1] - 33:3
single [9] - 52:6, 52:13, 52:14, 56:18, 56:19, 102:14, 104:1, 113:11, 113:14
sit [1] - 160:13
situation [3] - 137:12, 153:1, 163:2
situations [1] - 103:22
six [9] - 16:16, 16:18, 48:17, 49:21, 62:24, 63:17, 73:21, 93:19, 138:14
six-month [1] - 49:21
size [2] - 82:18, 164:25
skill [1] - 154:10
skilled [2] - 12:15, 14:6
skills [2] - 68:10, 69:9
slices [1] - 20:17
slide [6] - 16:12, 20:1, 20:3, 61:20, 73:1, 133:1
slides [1] - 61:19
slightly [2] - 22:2, 100:24
slow [1] - 35:4
slower [1] - 8:15
slowness [6] - 35:5, 37:10, 37:11, 37:12, 40:11
small [5] - 50:15, 82:15, 115:19, 138:11, 139:18
smaller [1] - 155:9
smell [1] - 36:3
smelling [1] - 35:23
Smith [2] - 1:18, 3:7
SMITH [7] - 144:11, 144:23, 145:1, 145:6, 166:21, 167:10, 167:14
Social [1] - 159:16
social [3] - 66:10, 66:20, 95:25
software [2] - 13:5, 14:8
solving [5] - 63:25, 64:1, 66:7, 66:12, 70:20
somatoform [1] - 162:24
someone [23] - 7:1, 40:20, 44:18, 45:14,

46:9, 48:21, 49:14, 49:15, 51:13, 52:3, 52:10, 66:24, 70:6, 71:2, 73:2, 98:16, 98:17, 99:12, 108:19, 134:12, 134:16, 137:9, 137:17
sometime [1] - 11:21
sometimes [5] - 36:18, 40:9, 94:7, 113:6, 163:20
somewhat [2] - 83:15, 112:21
somewhere [3] - 38:7, 74:7, 151:14
son [1] - 28:11
sooner [1] - 87:24
sorry [18] - 4:24, 19:6, 24:9, 27:22, 34:23, 56:10, 83:1, 86:4, 90:15, 90:24, 90:25, 94:15, 111:7, 117:24, 118:8, 126:14, 150:12, 158:4
sort [16] - 4:12, 19:6, 27:25, 62:5, 62:10, 63:12, 73:25, 74:5, 80:16, 99:10, 100:13, 106:22, 111:24, 133:9, 154:13, 157:2
sorts [1] - 40:15
sound [1] - 78:25
sounds [5] - 24:12, 27:24, 53:21, 87:13, 108:8
source [5] - 16:3, 17:8, 62:1, 62:13, 81:16
sources [3] - 62:2, 132:24, 156:24
SOUTHERN [1] - 1:1
span [1] - 48:13
SPEAKER [2] - 104:23, 105:2
speaking [1] - 14:13
specialist [2] - 78:10, 78:13
specialize [3] - 98:21, 98:23, 145:22
specialized [3] - 98:8, 145:17, 155:4
specializes [1] - 145:15
specific [29] - 8:22, 17:7, 17:18, 44:21, 45:6, 52:25, 61:5, 61:7, 62:1, 62:15, 68:5, 68:10, 69:8, 78:15, 83:20, 84:12, 84:14, 85:13, 88:21, 88:22, 89:1, 114:16, 121:7, 129:17, 145:18, 147:24, 148:19, 155:21, 165:5
specifically [8] - 18:12, 46:18, 51:4, 53:14, 53:20, 56:9, 66:4, 150:12
specifics [5] - 29:6, 67:9, 71:12, 73:18, 139:12
speech [1] - 37:12
speeches [2] - 30:13, 31:18
spent [1] - 8:6
spill [1] - 96:6
spinal [1] - 99:6
spits [1] - 100:15
spoken [1] - 127:9
spot [2] - 117:23, 122:4
spouse [1] - 74:21
spread [1] - 47:7
spreading [2] - 37:18, 47:13
spreads [1] - 48:22
stability [1] - 35:18
staff [1] - 48:6
stage [41] - 7:3, 7:7, 19:23, 41:9, 41:10, 42:8, 70:6, 72:1, 118:16, 118:17,

118:25, 119:5, 119:6, 119:12, 119:24, 120:6, 121:15, 122:7, 123:5, 123:8, 124:1, 124:2, 124:5, 126:5, 134:10, 134:16, 134:25, 135:3, 135:5, 135:19, 136:10, 136:21, 137:13, 140:15, 140:22, 140:24, 141:1, 141:8, 141:10, 141:21

stages [1] - 126:6

stamp [1] - 11:13

stand [10] - 124:18, 144:20, 150:21, 151:10, 151:13, 151:18, 152:2, 153:21, 164:8, 165:8

standard [12] - 103:7, 103:10, 103:17, 103:23, 104:4, 104:11, 106:4, 106:13, 106:14, 106:16, 106:21

standardized [2] - 138:6, 162:4

standing [1] - 35:16

start [6] - 36:1, 44:21, 136:13, 166:22, 167:3

started [5] - 19:24, 93:24, 108:25, 144:9, 144:12

starting [1] - 15:20

state [14] - 9:20, 23:6, 23:23, 23:25, 24:7, 24:20, 47:21, 52:5, 62:16, 126:10, 126:15, 130:12, 130:14

statement [6] - 40:16, 55:15, 55:21, 123:2, 123:3, 126:11

statements [1] - 158:10

states [4] - 65:22, 67:15, 101:19, 107:6

STATES [3] - 1:1, 1:3, 1:12

stating [3] - 28:21, 71:23, 92:14

statistical [3] - 103:20, 103:21, 106:22

statistically [5] - 103:3, 103:4, 106:20, 107:3, 112:17

statistics [1] - 60:3

status [3] - 55:6, 142:12, 142:13

statutory [2] - 154:21, 154:23

stay [1] - 99:10

stenography [1] - 2:15

stickers [1] - 54:2

still [17] - 15:9, 15:14, 23:5, 23:10, 23:12, 23:21, 25:18, 30:5, 32:14, 42:8, 43:3, 74:8, 74:16, 92:18, 102:12, 123:14, 141:17

stop [2] - 122:17, 162:17

stopped [1] - 28:16

stopping [1] - 129:22

straight [1] - 50:10

strange [1] - 163:25

streams [1] - 31:14

Street [2] - 1:21, 2:7

stretching [1] - 143:13

striatum [1] - 34:11

strike [4] - 122:23, 123:15, 123:16, 127:10

strong [1] - 51:22

strongly [1] - 49:21

structural [1] - 164:21

structures [1] - 37:6

struggle [1] - 28:25

struggled [3] - 8:16, 29:4, 29:6

student [3] - 160:12, 160:13

studies [27] - 52:19, 53:1, 53:3, 58:11, 58:12, 61:16, 63:10, 63:11, 84:23, 85:2, 88:3, 88:5, 88:14, 88:15, 88:20, 88:24, 104:18, 146:5, 146:14, 146:16, 146:23, 148:3, 150:20, 151:7, 152:4, 152:5, 152:6

study [25] - 57:24, 58:5, 58:6, 58:7, 59:19, 59:25, 60:4, 61:5, 61:7, 61:13, 85:25, 87:7, 88:19, 104:14, 104:16, 108:4, 111:10, 111:16, 111:18, 111:19, 112:2, 112:14, 139:17, 149:6, 154:22

stuff [1] - 35:23

sub [2] - 4:12, 11:13

sub-A [1] - 11:13

sub-numbers [1] - 4:12

subcortical [2] - 85:12, 88:9

subject [5] - 73:24, 158:11, 159:20, 159:22, 162:13

subjective [3] - 40:3, 40:17, 136:11

subjects [2] - 18:15, 18:17

submitted [1] - 78:6

subsequent [1] - 25:7

substance [1] - 81:19

substantial [1] - 166:1

substantially [1] - 58:14

subtle [1] - 15:12

sudden [1] - 105:6

suffered [1] - 22:20

suffering [1] - 123:18

suffers [2] - 33:19, 34:4

sugar [3] - 18:9, 81:14, 81:16

suggest [8] - 49:10, 49:21, 50:14, 51:2, 74:25, 83:18, 118:18, 132:21

suggested [5] - 32:3, 60:5, 83:16, 91:13, 165:3

suggesting [4] - 91:22, 108:12, 164:19, 165:23

suggestion [2] - 112:9, 117:1

suggestive [6] - 79:16, 80:11, 91:9, 91:19, 92:1, 112:16

suggests [2] - 17:20, 160:3

Suite [1] - 2:3

sum [1] - 147:17

summary [5] - 60:17, 61:24, 62:2, 71:24, 139:7

supplemental [4] - 84:10, 117:16, 119:17, 142:24

support [4] - 61:14, 82:1, 84:5, 84:15

supported [2] - 34:8, 43:17

supporting [1] - 82:21

Supreme [1] - 155:8

surface [1] - 163:19

surgical [6] - 10:7, 10:11, 146:7, 146:9, 146:12, 146:19

surprising [1] - 78:25

surviving [1] - 28:6

sustain [1] - 133:15

sustained [4] - 42:14, 68:3, 69:7, 136:16

swelling [1] - 116:7

switched [4] - 14:15, 146:14, 146:18, 147:10

sworn [2] - 144:18, 145:4

symptom [19] - 35:21, 36:10, 36:25, 39:16, 39:18, 39:21, 40:6, 44:24, 45:1, 45:3, 45:8, 65:19, 161:6, 161:15, 161:18, 161:21, 161:22

symptoms [36] - 5:6, 5:14, 15:12, 15:17, 25:6, 29:17, 34:17, 34:21, 34:22, 34:24, 34:25, 35:2, 35:19, 36:15, 37:2, 37:4, 37:9, 37:14, 37:16, 37:20, 40:5, 41:8, 41:25, 47:17, 88:22, 89:10, 89:14, 89:15, 89:16, 90:6, 96:3, 108:20, 110:25, 126:25, 140:13

syndrome [1] - 55:5

T

table [2] - 75:20, 138:4

talks [1] - 161:10

Tamara [1] - 55:3

tangential [1] - 28:23

tangles [6] - 42:5, 99:10, 109:15, 109:16, 109:19

task [6] - 150:16, 157:12, 159:24, 160:4, 160:20, 162:9

tasked [1] - 98:7

tasking [1] - 37:14

tasks [2] - 137:19, 158:10

Tau [10] - 41:7, 109:15, 109:16, 109:19, 109:23, 110:1, 110:4, 110:6, 110:12, 110:19

taught [1] - 147:7

Tax [1] - 1:20

teaching [2] - 147:1, 147:2

team [2] - 114:17, 143:19

technicality [1] - 42:4

techniques [1] - 148:25

Tel [4] - 1:22, 2:4, 2:8, 2:13

temporal [4] - 85:10, 88:8, 111:13, 164:22

ten [6] - 46:6, 87:5, 94:12, 140:5, 140:7, 140:9

tends [1] - 55:8

term [10] - 11:23, 43:13, 45:11, 59:8, 59:20, 83:19, 139:21, 154:12, 159:3, 159:5

terminology [4] - 135:21, 135:22, 137:24, 140:12

terms [22] - 9:10, 21:21, 21:22, 22:8, 22:24, 29:19, 31:4, 31:21, 31:25, 37:10, 46:9, 50:13, 85:1, 85:7, 96:10, 138:15, 143:21, 154:6, 155:20, 159:3, 159:7, 164:3

test [31] - 9:7, 23:15, 23:17, 23:21, 23:22, 47:15, 110:12, 110:19, 113:18,

159:20, 159:22, 159:23, 160:1, 160:7, 160:14, 160:16, 160:17, 160:19, 161:14, 162:1, 162:4, 162:5, 162:7, 162:8, 162:15, 162:16, 162:20, 163:24, 164:4, 165:23, 165:24

tested [1] - 35:12

testified [5] - 115:2, 124:15, 125:16, 127:19, 145:4

testify [6] - 68:9, 128:1, 129:7, 129:11, 129:14

testifying [1] - 43:3

testimony [14] - 30:17, 69:2, 69:18, 122:20, 124:7, 124:17, 124:18, 124:25, 125:1, 127:4, 129:8, 151:20, 159:4

testing [26] - 6:25, 8:14, 8:16, 31:1, 31:13, 32:3, 40:14, 44:17, 127:6, 139:19, 152:24, 152:25, 157:9, 157:14, 159:19, 159:23, 160:25, 161:2, 161:3, 161:6, 161:7, 161:10, 161:11, 161:15, 163:22, 165:6

tests [18] - 44:18, 80:24, 110:8, 110:9, 138:11, 145:18, 160:3, 161:25, 162:2, 162:3, 162:10, 162:12, 162:15, 163:7, 163:11, 163:12, 163:23, 166:22

TEXAS [1] - 1:1

Texas [3] - 1:4, 2:3, 2:13

th [1] - 79:22

THE [99] - 1:1, 1:1, 1:11, 1:17, 2:1, 4:6, 4:7, 4:13, 4:17, 11:17, 26:2, 33:10, 33:13, 42:14, 42:16, 43:5, 43:8, 53:16, 54:3, 54:8, 55:11, 55:23, 56:10, 56:22, 57:4, 57:7, 57:14, 57:17, 58:16, 59:2, 64:16, 64:22, 65:2, 68:3, 68:14, 69:6, 74:23, 75:9, 75:10, 75:13, 77:7, 80:2, 86:7, 105:3, 105:9, 105:14, 105:16, 105:19, 116:16, 116:19, 116:24, 117:2, 117:22, 117:25, 120:14, 121:3, 121:5, 121:7, 121:8, 121:10, 121:11, 121:12, 121:23, 122:17, 122:25, 123:13, 123:20, 123:23, 124:6, 124:11, 124:24, 125:10, 125:11, 125:15, 125:19, 125:22, 127:22, 128:7, 129:6, 130:4, 132:13, 133:2, 133:5, 133:14, 136:16, 141:25, 142:2, 143:12, 143:25, 144:3, 144:6, 144:7, 144:14, 144:19, 144:20, 144:25, 166:25, 167:12, 167:16

themselves [1] - 76:11

themselves [4] - 75:25, 76:6, 138:12, 139:18

therapeutic [4] - 156:10, 156:12, 156:16

therapy [2] - 154:12

therefore [2] - 69:22, 126:18

thinking [1] - 37:11

thinks [1] - 123:10

third [1] - 15:16

thorough [2] - 25:20, 166:10

thoughts [3] - 37:10, 137:22, 152:22

thousand [1] - 126:13

three [12] - 8:3, 11:15, 15:1, 47:9, 48:11, 49:20, 61:12, 61:14, 61:16, 100:7, 130:21, 131:12

three-and-a-half [1] - 11:15

threshold [2] - 137:6, 137:16

throughout [3] - 8:19, 111:23, 152:10

timing [1] - 70:16

title [3] - 55:1, 59:7, 59:16

titled [1] - 54:24

today [7] - 26:14, 27:11, 32:14, 96:14, 120:8, 124:18, 127:4

together [2] - 149:24, 156:5

Tommy [3] - 30:17, 142:14, 142:18

tomorrow [3] - 144:13, 167:3, 167:17

took [1] - 9:3

tool [1] - 152:1

tools [5] - 100:13, 139:14, 152:1, 153:21, 153:23

top [6] - 20:15, 76:15, 78:22, 82:13, 138:16, 138:25

topic [1] - 14:15

topics [1] - 45:13

total [3] - 8:3, 147:17, 151:23

totally [1] - 138:18

touch [1] - 35:15

towards [3] - 5:24, 6:7, 129:2

tracer [9] - 17:4, 17:5, 17:10, 17:12, 17:13, 17:18, 18:2, 101:22, 107:3

track [3] - 132:2, 151:19, 167:2

tract [2] - 50:24, 132:1

traffic [1] - 13:14

training [3] - 145:17, 155:2, 155:4

trajectories [1] - 59:21

trajectory [5] - 45:20, 52:7, 57:12, 57:21, 60:19

Trajectory [1] - 59:8

transcript [2] - 124:12, 167:21

Transcript [1] - 2:16

transcription [1] - 2:16

transfusions [1] - 82:22

transient [5] - 9:20, 15:11, 23:5, 24:20, 24:22

translation [1] - 90:12

travels [1] - 50:19

treat [2] - 12:9, 48:1

treated [2] - 12:10, 146:21

treating [2] - 99:21, 135:12

treatise [5] - 56:7, 56:15, 56:16, 58:17, 58:20

treatment [5] - 99:18, 150:22, 151:4, 154:11, 156:5

tremendous [1] - 155:19

tremors [1] - 35:6

trend [1] - 45:19

trial [10] - 69:17, 150:21, 151:10, 151:13, 151:18, 152:2, 153:21, 164:8, 165:8

tricks [1] - 86:6

true [9] - 24:21, 31:4, 33:2, 38:4, 38:6,

43:9, 126:17, 131:24, 141:18

trust [1] - 66:20

truth [1] - 158:18

try [6] - 23:2, 116:25, 142:14, 142:19, 161:20, 164:18

trying [16] - 5:14, 6:20, 16:3, 19:10, 38:2, 89:11, 113:22, 121:24, 123:14, 156:12, 157:16, 158:19, 159:14, 159:18, 161:13

turn [5] - 63:4, 88:2, 90:15, 126:1, 127:25

turning [1] - 30:4

turns [2] - 71:8, 99:9

twelve [1] - 59:1

twice [2] - 157:18, 164:6

two [37] - 8:4, 11:1, 20:14, 20:24, 21:8, 22:2, 22:4, 25:12, 25:25, 28:8, 52:2, 53:2, 56:20, 57:12, 57:21, 60:20, 61:3, 71:10, 73:16, 73:18, 75:11, 89:16, 89:24, 90:1, 90:5, 106:16, 106:18, 106:21, 106:23, 113:10, 113:14, 114:9, 126:13, 150:6, 159:3, 161:4, 161:5

two-and-a-half [2] - 25:25, 106:23

two-dose [1] - 28:8

two-fold [4] - 56:20, 57:12, 57:21, 60:20

TX [1] - 2:4

type [12] - 5:10, 40:22, 64:4, 74:3, 82:9, 82:11, 87:19, 95:23, 152:24, 156:25, 157:22, 159:15

types [14] - 5:13, 6:23, 17:11, 37:19, 41:21, 44:23, 46:5, 71:1, 128:25, 135:25, 137:14, 137:20, 140:11, 145:18

typical [8] - 16:25, 83:6, 83:13, 83:25, 84:15, 90:17, 96:7, 113:9

typically [17] - 19:21, 20:10, 40:5, 45:24, 65:11, 68:23, 79:6, 104:17, 106:16, 113:13, 113:16, 113:20, 114:21, 116:5, 153:5, 154:14, 157:4

U

U.S [11] - 1:20, 146:1, 146:5, 146:7, 146:25, 147:15, 147:17, 150:11, 150:12, 153:6, 155:2

ultimate [1] - 7:6

ultimately [1] - 6:21

umbrella [1] - 148:19

unable [5] - 126:18, 127:24, 128:1, 128:11, 129:25

uncertainty [2] - 38:16, 123:24

unconscious [1] - 162:23

under [3] - 28:25, 160:23, 163:19

under-represents [1] - 160:23

under-the-surface [1] - 163:19

undergo [1] - 77:23

underlying [4] - 19:14, 23:7, 51:8, 88:20

underneath [2] - 62:10, 62:11

understood [1] - 125:24

<p>underwent [2] - 10:8, 108:4</p> <p>unduly [1] - 79:13</p> <p>unfortunately [3] - 26:13, 34:3, 138:21</p> <p>UNIDENTIFIED [2] - 104:23, 105:2</p> <p>unit [1] - 150:25</p> <p>UNITED [3] - 1:1, 1:3, 1:12</p> <p>University [1] - 64:8</p> <p>university [2] - 64:10, 93:21</p> <p>unlikely [5] - 118:16, 119:6, 119:11, 122:6, 125:13</p> <p>unmarked [1] - 80:3</p> <p>unnecessary [2] - 110:20, 110:22</p> <p>unpack [1] - 150:7</p> <p>unreliable [1] - 132:21</p> <p>untrained [1] - 130:8</p> <p>up [34] - 11:22, 14:9, 16:8, 17:22, 27:2, 31:15, 38:7, 40:11, 42:13, 57:24, 61:18, 62:4, 76:20, 81:18, 90:24, 95:18, 99:11, 100:14, 103:9, 103:20, 120:18, 120:22, 124:7, 124:15, 125:5, 128:21, 133:6, 144:9, 151:20, 162:7, 163:19, 166:10, 166:15, 167:4</p> <p>updated [1] - 149:25</p> <p>uptake [4] - 18:13, 19:20, 19:21, 112:20</p> <p>urinary [9] - 47:6, 47:10, 47:12, 50:24, 131:11, 131:19, 132:1, 132:8</p> <p>urine [2] - 47:3, 132:6</p> <p>urological [1] - 10:8</p> <p>urosepsis [1] - 47:12</p> <p>useful [4] - 6:8, 6:16, 108:22, 111:3</p>	<p>victims [1] - 66:17</p> <p>video [14] - 4:11, 5:1, 8:1, 8:7, 10:25, 11:11, 11:18, 13:21, 26:4, 26:24, 27:4, 28:16, 28:21, 32:1</p> <p>Video [1] - 26:21</p> <p>video-recorded [1] - 32:1</p> <p>videographer [1] - 5:5</p> <p>videos [4] - 30:24, 31:18, 127:2, 142:17</p> <p>videotape [2] - 31:16, 31:17</p> <p>videotaped [1] - 25:7</p> <p>view [1] - 156:17</p> <p>views [2] - 16:18, 20:17</p> <p>virus [3] - 28:1, 28:14, 29:3</p> <p>visual [2] - 101:2, 101:13</p> <p>VOLUME [1] - 1:13</p> <p>volume [2] - 19:15, 19:20</p> <p>volumetric [3] - 19:8, 116:1, 116:2</p> <p>VS [1] - 1:4</p> <p>vulnerabilities [2] - 49:15, 50:6</p> <p>vulnerability [8] - 49:14, 50:2, 50:5, 51:8, 51:24, 66:25, 132:3, 132:4</p> <p>vulnerable [4] - 49:11, 49:22, 66:21, 66:23</p>	<p>willing [1] - 153:10</p> <p>wind [1] - 76:20</p> <p>winds [1] - 38:6</p> <p>WITNESS [8] - 117:22, 121:7, 121:10, 121:12, 123:23, 125:11, 144:6, 144:19</p> <p>witness [32] - 55:13, 55:14, 56:8, 58:12, 58:17, 58:18, 58:19, 58:20, 58:21, 68:9, 69:20, 76:14, 104:25, 105:13, 120:7, 120:25, 121:3, 122:3, 122:10, 122:13, 123:17, 125:4, 125:7, 127:17, 130:8, 132:20, 132:24, 142:25, 143:14, 143:25, 144:18</p> <p>witness' [2] - 69:1, 69:18</p> <p>witness's [2] - 120:17, 120:21</p> <p>witnesses [5] - 11:4, 105:7, 142:15, 143:20, 143:22</p> <p>word [13] - 35:3, 40:12, 78:23, 119:15, 119:19, 120:4, 120:24, 121:2, 126:10, 128:19, 133:23, 149:15, 155:25</p> <p>words [10] - 16:15, 41:17, 44:21, 76:14, 120:21, 133:20, 157:12, 159:23, 160:5, 166:16</p> <p>works [1] - 99:11</p> <p>workup [1] - 153:3</p> <p>world [2] - 31:2, 32:6</p> <p>worry [1] - 117:3</p> <p>worse [2] - 15:6, 29:9</p> <p>wrapping [1] - 116:20</p> <p>write [1] - 153:17</p> <p>wrote [10] - 82:25, 83:5, 86:12, 86:15, 88:4, 90:19, 91:2, 92:11, 92:14</p>
V	W	Y
<p>vaccine [3] - 28:9, 28:13, 29:4</p> <p>valid [15] - 24:18, 104:3, 104:9, 105:22, 106:12, 160:2, 161:11, 162:16, 162:17, 162:18, 163:24, 164:2, 164:4, 165:25</p> <p>validity [17] - 157:11, 159:22, 160:3, 160:25, 161:3, 161:6, 161:10, 161:15, 161:25, 162:3, 162:10, 162:12, 163:7, 163:11, 163:17, 163:23</p> <p>value [5] - 58:14, 104:11, 108:13, 108:16, 140:13</p> <p>Vanderbilt [5] - 5:11, 93:21, 94:1, 97:14, 98:14</p> <p>variability [1] - 33:1</p> <p>variation [2] - 47:17, 153:20</p> <p>variations [1] - 47:21</p> <p>varied [2] - 151:22, 152:25</p> <p>various [4] - 27:17, 62:2, 88:11, 149:7</p> <p>Varnado [1] - 2:2</p> <p>verify [1] - 157:11</p> <p>version [4] - 28:8, 59:17, 64:6, 117:20</p> <p>versions [1] - 64:3</p> <p>versus [6] - 41:3, 61:17, 102:7, 104:13, 130:15, 140:1</p> <p>Vesey [1] - 2:7</p> <p>vessels [1] - 82:2</p> <p>vet [1] - 104:10</p>	<p>wait [4] - 55:23, 113:16, 113:20, 146:12</p> <p>walk [3] - 15:19, 151:24</p> <p>walked [1] - 98:13</p> <p>walking [1] - 27:15</p> <p>wander [1] - 13:8</p> <p>wants [5] - 55:14, 56:2, 58:19, 156:7, 166:23</p> <p>warn [1] - 13:6</p> <p>Wash [1] - 64:8</p> <p>Washington [3] - 1:22, 64:7, 64:10</p> <p>waste [2] - 58:13, 65:1</p> <p>watched [4] - 4:14, 4:21, 28:20, 127:1</p> <p>watching [1] - 8:7</p> <p>ways [12] - 19:10, 25:18, 27:18, 38:14, 42:11, 44:17, 63:15, 90:3, 135:24, 136:9, 137:1, 161:4</p> <p>wear [2] - 27:11, 27:13</p> <p>wearing [3] - 27:5, 27:16, 27:18</p> <p>web [1] - 94:15</p> <p>weekly [1] - 155:5</p> <p>weeks [2] - 7:20, 73:16</p> <p>weight [3] - 81:24, 82:18, 104:23</p> <p>whereas [1] - 154:16</p> <p>wherewithal [1] - 165:16</p> <p>white [2] - 111:12, 111:23</p> <p>whitlow [1] - 21:18</p> <p>Whitlow [1] - 22:1</p> <p>whole [5] - 8:2, 8:7, 102:20, 119:17, 152:23</p> <p>widely [1] - 63:6</p> <p>wider [1] - 19:3</p> <p>wife [3] - 9:1, 9:5, 28:11</p> <p>Williams [1] - 87:7</p>	<p>y'all [1] - 27:8</p> <p>year [17] - 31:19, 46:24, 47:9, 48:14, 57:22, 57:24, 60:7, 60:9, 86:5, 93:9, 113:11, 113:14, 113:16, 113:20, 135:6, 142:9, 142:11</p> <p>years [16] - 35:25, 46:6, 46:16, 59:1, 73:18, 87:5, 93:18, 93:19, 140:5, 140:7, 140:9, 146:17, 147:3, 147:22, 149:8, 150:19</p> <p>York [1] - 2:8</p> <p>young [2] - 87:9, 87:10</p> <p>younger [1] - 95:10</p> <p>yourself [2] - 113:19, 162:17</p> <p>youth [1] - 148:3</p>
	Z	
	<p>Z-score [2] - 103:6, 103:19</p> <p>zero [3] - 63:1, 65:13, 139:8</p> <p>zoom [2] - 86:4, 86:9</p>	